THE OIL WEEKLY

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The Oil Man's Calendar

SEPT.	
4- 8	American Society of Mechanical Engineers, New York.
5	Oil Workers International Union, Hammond, Ind.
11-15	American Chemical Society, Boston, Mass.
13-15	National Petroleum Association, Atlantic City, N. J.
27-28	West Virginia Oil & Natural Gas Association, Charleston, W. Va.
OCT.	
5- 7	American Institute of Mining & Metallurgical Engineers, Petroleum Division, Galveston, Texas.
5- 7	Texas Mid-Continent Oil & Gas Association, Houston, Texas.
9-10	American Gas Association Annual Convention, New York.
16-20	National Safety Congress, Atlantic City, N. J.
17	National Stripper Well Association, Fort Worth, Texas.
18-20	Independent Petroleum Association of America, Fort Worth, Texas.
19-20	A. I. M. E. Petroleum Division, Los Angeles.
NOV.	
13-17	American Petroleum Institute, Stevens Hotel, Chicago.
15-17	American Institute of Chemical Engineers, Providence, R. I.
DEC.	
4- 7	American Society of Mechanical Engineers, Philadelphia.
APR.	
10-12	American Association of Petroleum Geologists, Chicago.
11-12	American Petroleum Institute, Eastern District, Division of Production, Columbus, Ohio.

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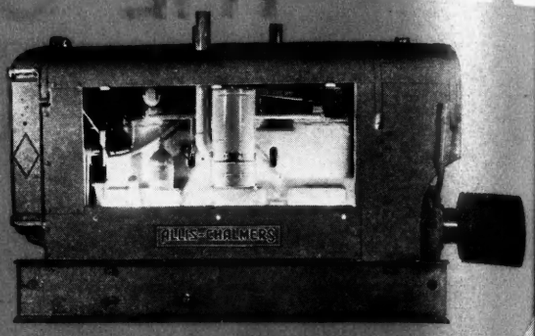

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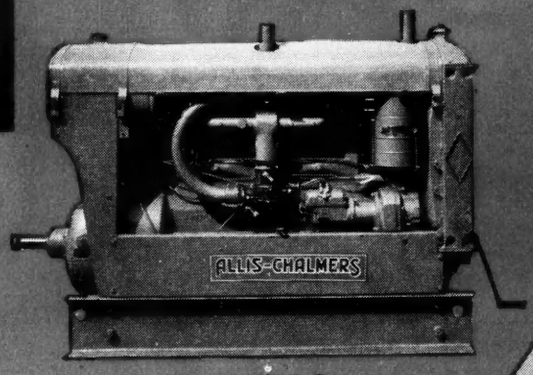

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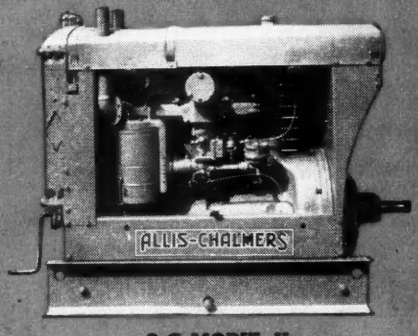

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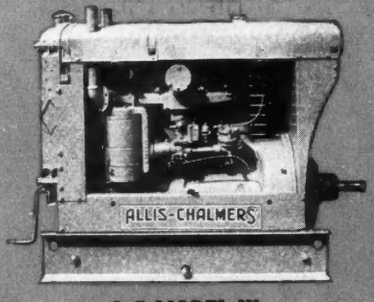

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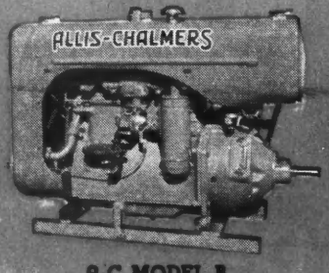

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THE OIL WEEKLY

SEPTEMBER 4, 1939

VOLUME 94 NUMBER 13

The Week's Panorama

SOME independent operators and some major company executives disapproved the Mid-Continent shutdowns at the beginning and contended to the end that the closings were unsound, legally and economically.

Nevertheless, the shutdowns had overwhelming support among the producers affected. Only an insignificant few attacked the shutdown orders in the courts, and many lauded the program through the press and at state hearings.

The shutdowns were made and accepted as an emergency move, and whether sound or unsound, they provided the industry an interesting experiment, in addition to improving the inventory position and stabilizing the markets at least temporarily.

Showdown on Stocks . . .

The shutdowns furnished confirmation that crude oil inventories in the United States are not seriously excessive; that in fact, the industry is virtually down to bottom with crude storage, some companies being now actually short of crude.

Furthermore, some doubt has been raised through the shutdowns and the Texas Railroad Commission hearing last week as to whether gasoline inventories are seriously excessive. For a large part of the industry was represented at the Texas hearing, and most of the companies that offered figures indicated that their particular inventories of gasoline were about in line with their anticipated requirements.

Estimates of what the national inventory of gasoline should be indicated an excess of 10,000,000 barrels or more. But it has not been made clear where the surplus is, inasmuch as the refiners individually regard their own stocks as conservative.

Some observers suspect that the gasoline surplus may be to a considerable extent imaginary, as the crude oil surplus seemed to be in the recent shutdown.

Crude Stocks Low . . . .

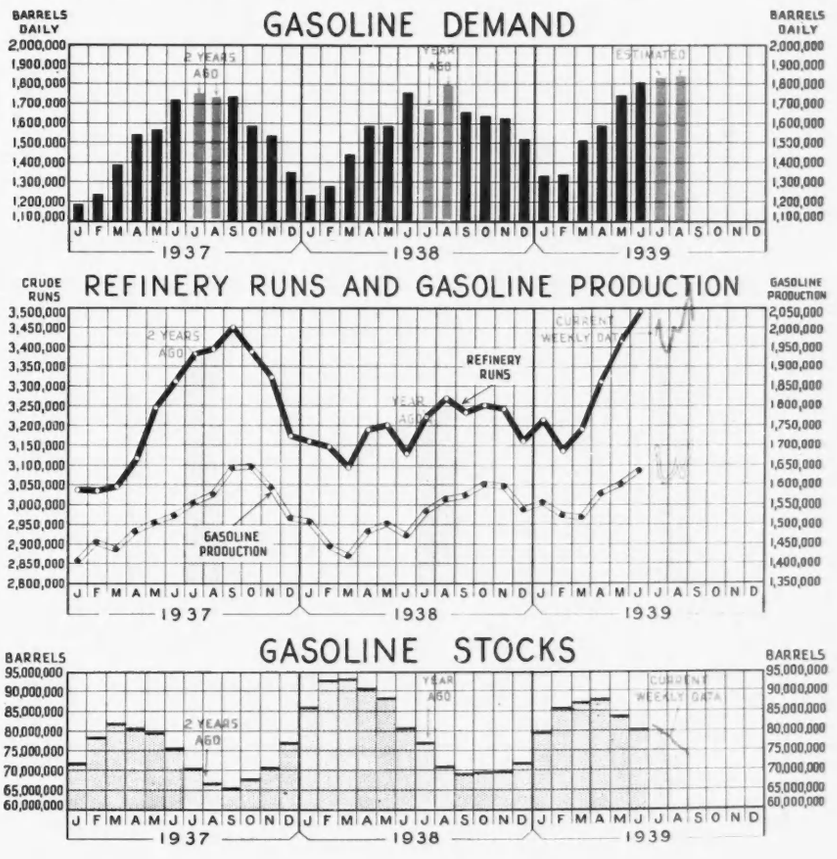
Prior to the shutdowns, it was estimated that United States crude oil stocks of about 268,000,000 barrels were excessive by 20,000,000 to 50,000,000 barrels, as minimum requirements were placed at 200,000,000 to 250,000,000 barrels.

But the shutdowns showed conclusively that most companies, individually, already had their crude stocks down to or very near their minimum working levels; and furthermore, that some were left short of crude in consequence of the closings.

Similarly, it is suspected that any forced withdrawals from gaso-

Refinery Runs Lower and Gasoline Stocks Cut

Shutdowns cause slowing down of plant activity, and inventories of gasoline are reduced 1,263,000 barrels in week ended August 26.


GASOLINE DEMAND
BARRELS DAILY
2 YEARS AGO
YEAR AGO
ESTIMATED
CURRENT WEEKLY DATA
REFINERY RUNS AND GASOLINE PRODUCTION
CRUDE RUNS
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GASOLINE STOCKS
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J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D
1937
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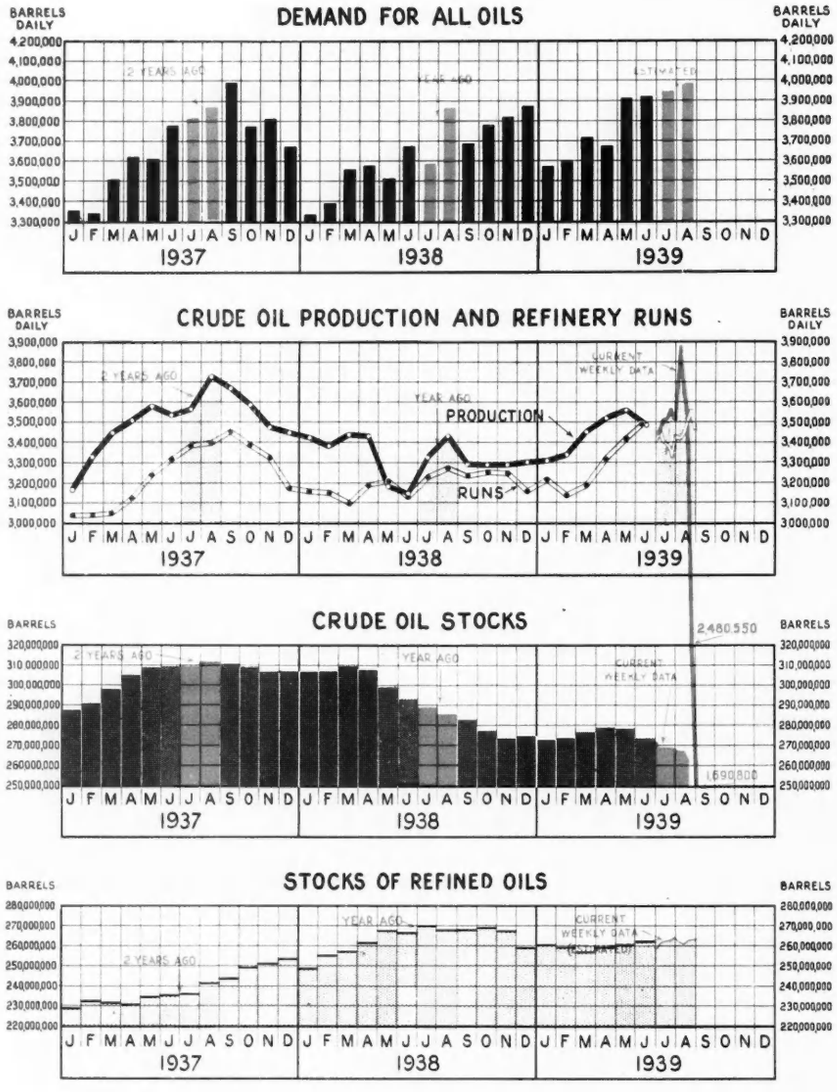
Crude Oil Production Down to 17-Year Low

Shutting down of Mid-Continent fields causes decline of crude output in week ended August 26 to lowest level since early 1922.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CRUDE OIL PRODUCTION AND REFINERY RUNS
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RUNS
CRUDE OIL STOCKS
2,480,550
1,690,806
STOCKS OF REFINED OILS

line storage in substantial quantities, as through some prolonging of the oil field shutdowns, might have left numerous companies short of gasoline.

Large Runs Threatened . .

Nevertheless, it has been generally contended that gasoline stocks of the nation are materially too high, and so the threat of proceeding with market-weakening inventories of gasoline remains.

The gasoline inventory situation will be improved to some extent in consequence of slowing down of refinery operations during the crude oil famine.

But plant activity is expected to be brisk following the reopening of fields, and gasoline production may prove larger than satisfactory.

Refiners on Spot . . . . .

In this connection, the refining division of the industry will be "on the spot," and the producing division will observe with critical interest.

The refining division sometimes can explain excessive plant throughput as practically unavoidable because of excessive crude oil production.

But producers have been on a 15-day vacation without pay, and they have resumed production under exceptionally strict allowables.

Consequently, companies with surplus stocks of gasoline or other refined products have had, and will continue to have, golden opportunities to liquidate such excess inventories.

Therefore, the refining division of the industry henceforth must shoulder much of the responsibility for any weakness that may develop in the markets.

If gasoline prices weaken, it probably will be because of excessive refinery runs and not because of surplus crude oil production.

And if the gasoline market should weaken under the current strict program of crude control, the most promising remedy might be curtailment of refinery runs—not reduction of crude oil prices.

Stability Restored . . . . .

The practical and immediate effect of the Mid-Continent shutdowns cannot be disparaged.

The closings accomplished, at least temporarily, the purposes for which they were promulgated: improvement of the inventory situation and stabilization of the markets.

Crude oil purchasers who cut prices at the middle of August blamed the reductions on under-market selling of crude in several states.

Better Conditions . . . . .

The same purchasers, in restoring the old prices last week, credited the increases to the expectation of better conditions following the shutdowns. One large purchaser, in restoring previous postings, stated that the statistical position of the industry already had improved and was expected to improve sufficiently by the end of the shutdown period to justify the higher prices. Another explained that higher postings were restored in the belief that under-market selling of crude would no longer prevail after the shutdowns; although that statement was followed by the warning that postings again would be reduced if crude continued to be sold in substantial quantities at less than posted prices.

Indications are that the Mid-Continent states are to hold production to levels approximating 15 percent under the Bureau of Mines estimate of September demand. Such strict control of output will force the continued withdrawal of crude from stocks if refiners keep up normal seasonal still operations.

Community Attitude Should Direct Course of Oil

WHAT is a fair price for oil? Should profits be the first consideration of management? What effect do imports have? How much oil should be produced? What part does community interest play?

These questions are answered by the author in the accompanying discusssion, in which, an analysis is made of the fundamental principles underlying sound business function of all industry.

THE OIL WEEKLY feels that much good can be accomplished, particularly in periods of low economic levels, by a careful consideration of all the facts, and a free expression of constructive opinion on the part of the industry's leaders. Therefore, we are pleased to present Mr. Figart's remarks, which approach the problems of the oil industry from an entirely different angle than heretofore expressed. It is understood that the opinions are those of the author and they do not necessarily reflect the views of his company or the publishers.

By DAVID M. FIGART, President, United North & South Development Company

RECENT developments in the oil industry have emphasized how far we are from a permanent solution of its problems.

The oil industry differs from other types of industry in certain respects which we all recognize. The discovery of oil involves high exploration costs. We feel the need for some public authority to enforce orderly development of fields and to regulate withdrawal of oil under sound conservation principles so that maximum recovery at minimum cost will be assured.

We have assumed that the oil industry also differs from other industries in the need for some public authority to say how much oil should be produced; and so we have the Bureau of Mines estimates. This is a type of central planning which many New Dealers have urged upon all American industry; and while it has perhaps served us well during the last few years, one questions its fundamental soundness. The raw materials going into a motor car come under the classification of natural resources just as much as oil. Yet, who would suggest that the Department of Commerce should set a quota of cars to be produced by the State of Michigan, or by the Ford Company?

Then take the matter of prices. What is a fair price for oil? Is it $1 a barrel, or 50 cents a barrel, or $1.50 a barrel? What is a fair price for coal? Or for motor cars? Can we imagine a government department threatening the motor car industry if it sold cars below $1,000 apiece? Or what is a fair price for electricity or telephones? How much should we pay for a railroad ticket from Houston to New York, or for a ton of freight? Surely there is some better basis for fixing prices than the arbitrary opinion of a few business executives, or a few government officials.

Service to the Community

Suppose we approach this problem from a different angle altogether. Everybody is in business to make a profit, so we say. But that is not quite correct. The function of business is to serve the community—and profit is only a device by which we judge how well business is fulfilling its obligation.

Profit is the measure of the utility of an article to the community. If industry is turning out what the community wants, in the quantity it wants, the community will pay a price which shows a profit. If industry cannot sell its products at a profit, it is a sure sign of over-supply, or obsolesence, or mismanagement. Thus profit is potentially an automatic governor of industry. I say "potentially"—because today we are not giving profit a chance to show what it can do.

We have been somewhat confused also in our

reasoning on prices. An example of this is the importing of oil. If we import oil just because the price is low, we fall into the error of thinking in terms of money instead of goods—an almost universal economic fallacy. We think that if we can buy an imported article for less money than a domestic article, we stand to gain; whereas this is only true if the imported article is produced with substantially greater efficiency. If a British manufacturer can make a motor car in half the time we can, then we would be better off if we bought British cars, and devoted ourselves to doing something which we could do better than the British. This is true of anything else—silk, perfume, rubber, oil. Can Mexico, or Venezuela, produce oil more efficiently than we can? We know they can not. It may be that because of lower wages in those countries, or higher output as compared with our prorated allowables, the cost of production— in terms of money—is lower; but in terms of efficiency, say "man-hours" of production, we know that no country can beat us. And on this basis, imports of foreign oil, displacing domestic production, seem somewhat unfair to our own producers.

Price Relatively Unimportant

Price aside from its function of measuring the comparative efficiency of producers, is relatively unimportant. Theoretically, it shouldn't hurt the community to pay 25 cents a gallon for gasoline, if 18 cents is too low to give a profit, because, under proper corporate financial practices, what the community pays out in buying gasoline it gets right back in the form of wages, purchase of raw materials, and dividends or reserves for stockholders and employees. We miss the point by saying we must have low prices to widen the market. It was not lowering prices that brought Henry Ford such great success; it was the amazing increase in his efficiency in producing cars—which enabled him to make a profit at low prices.

One other serious error in our economic thinking has been in our assumption that the profit motive brought an automatic adjustment of supply and demand because competition was free. For example: people need tires for their cars. If there are not enough tires to supply the demand, the price will naturally rise to a point where the manufacturers are making big profits. These big profits cause them to increase their output, or induce new manufacturers to enter the field, until the supply of tires exceeds the demand. Then the production of tires is slowed down; and if the depression in the tire industry lasts long enough, some of the manufacturers may go out of business altogether. Thus the profit made on tires is supposed to bring an automatic adjustment of supply to demand.

Spending Community Savings

The rise of the great corporations has brought an end to this, without our quite realizing it. We know, for instance, that corporations spend community savings freely when they are making good profits. But have we stopped to consider how frequently they spend community savings when they are making small profits, or no profits at all? Ambitious to build volume, on the theory that it will make their business profitable by reducing the unit overhead costs, they frequently expand plant without any regard to the needs of the community. Or they decide that because of local labor conditions they must erect plants in some other more favorable locality; and the abandoned plants are frequently a total loss to the stockholders, wiped off the books and forgotten. Or they engage in price cutting to drive out competitors, again without regard for the general community welfare; for not only do they impose losses on those competitors, but they sustain crippling losses themselves—which eventually result in widespread unemployment. Moreover, the larger the competitor, the more he fights. Survival becomes a question—not of the fittest or the efficient, as we would suppose—but of the company with the longest purse. Recall, too, such practices as the unrestricted development of the East Texas field; the building of four gasoline stations where there is not enough business for one.

Though we may not like to admit it, our troubles are largely due to an unwise use of community savings entrusted to our large corporations. It would be foolish to say there were unworthy motives behind these corporate policies. The executives responsible no doubt believed their stockholders ultimately would benefit. But these executives are human, and subject to human limitations. They cannot possibly possess the wisdom necessary to keep a tremendously intricate machine like American industry in constant adjustment. And, of course, the solution cannot lie in transferring the responsibility from fallible business men to government officials who are equally fallible.

The community must be the final judge—its welfare the primary concern. Left to itself, the community can and will maintain a balance between saving and spending—our basic need—by supplying capital to profitable concerns, and discouraging the expansion of unprofitable concerns. A very simple change in our tax laws will restore the control of savings to the community.

Here, I think is the fundamental principle which underlies all industry. How many cars should General Motors make? As many as the people will buy at a profit. How much oil should be produced? As much as the people will buy at a profit. How much new capital should be invested in industry? As much as the people are willing to invest, based on the past earning history of that industry. How many new filling stations should be built, or new refineries? As many as can be operated profitably **as a unit.** There is somehing wrong when the profits of one department have to absorb the losses of some other department.

Frank Phillips in his recent article* said: "The oil industry hereafter must rely on only that kind of economic judgment as will enable the oil producer to operate at a reasonable profit." He pointed out how "the railroads destroyed their opportunity to profitably serve a growing national demand for transportation when they blindly ignored economics and continued to build up unnecessary and duplicating facilities." Ernest T. Weir recently told the steel manufacturers "it is principally management that is responsible for our plight. Not politics. Not economics. Not high labor costs . . . I maintain that if the management of any company is conducted in a sound way it will make profits, even at low levels of operation."

Only when business operates at a profit can it assure employment—on which general prosperity depends.

*See The OIL WEEKLY, August 14, 1939.

Outlook Is Brighter Despite Several Disturbing Factors

By L. J. LOGAN, Associate Editor

A CHEERFUL view of the oil industry's outlook appears well justified.

Following the recent emergency shutdowns of Mid-Continent fields, the industry is in an exceptionally good inventory position, and maintenance of this position is promised under the strict allowables adopted for September.

Helping to assure satisfactory conditions, moreover, is the continued record demand for petroleum products, with domestic consumption larger than ever before and exports holding up well.

Furthermore, the general business outlook in the United States has improved appreciably in the past few months, despite war clouds in Europe; and the better business conditions offer assurance of continued good demand for oils.

Weighing heavily in the balance against these advantages, however, are several disturbing circumstances, which lend uncertainty to the outlook and make caution essential.

New Wells a Difficulty

Foremost among the difficulties is the unstable market situation centering around excessive drilling rates and unregulated crude oil production in Illinois. And hope for the early curing of either of these conditions is scant.

Although drilling activity in the United States has declined considerably (5.2 percent) under its level of a year ago, the volume of new producing wells being completed (10,191 in first 7 months of 1939) is still larger than desired. Consequently, new wells are obtaining market connections only with difficulty. Likewise, there is a steady shrinkage in allowables, as newly completed wells are given their pro rata share of the existing market. For instance, in 1934, the allowable production of prorated wells in Texas averaged 40.8 barrels per well, but in 1938 had dropped to 23.7 barrels per well, a cut of 42 percent. This decline in income per well, and also the increasing difficulty of procuring market outlets for new completions, results in strong economic pressure to produce in excess of market requirements and to undersell.

Illinois Big Problem

Stabilization in Illinois probably is months away, whether it is to come by establishment of state proration or in the old, hard way, through a flush production peak and a subsequent natural decline. Even under curtailment, moreover, Illinois would be a market factor for some time. Prorated or not, it has a geographic advantage in supplying the Middle West, and its gain is the Mid-Continent's loss. When Illinois came into the picture with large, flush production it was inevitable that Oklahoma, Kansas, and other Mid-Continent areas must relinquish some of their old markets. That inevitable rearrangement of the markets is under way now and has not yet been completed, and until it is, Mid-Continent markets will remain unsettled. A region even as large as the Mid-Continent cannot lose a crude oil market of 250,000 barrels daily in a year without pain and complications.

In view of the Illinois development, it is not surprising that the Mid-Continent crude market has been under pressure. It is remarkable, rather, that serious weakening of the Mid-Continent market has been averted. Primarily responsible for this noteworthy resistance of the market has been the effective curtailment of crude production in the Mid-Continent states, although the task of making supply balance with demand has been alleviated by this year's record consumption.

So far, the Mid-Continent has preserved a relatively favorable crude market, not by merely wishing that Illinois would curtail but

(Continued on Page 35)

Continued Favorable Demand Indicated by Recent Bureau of Mines Forecasts

(Barrels)

MONTH	Total Demand for Domestic Crude	MOTOR FUEL DEMAND		
		Domestic	Export	Total
April, 1939:				
April, 1939, forecast	103,020,000	46,300,000	4,300,000	50,600,000
April, 1938, actual	103,732,000	43,254,000	4,474,000	47,728,000
Change from year ago	—0.7%	+7.1%	—3.7%	+6.0%
May:				
May, 1939, forecast	106,180,000	48,000,000	4,300,000	52,300,000
May, 1938, actual	106,290,000	44,911,000	4,576,000	49,487,000
Change from year ago	—0.1%	+6.9%	—6.0%	+5.7%
June:				
June, 1939, forecast	104,730,000	50,600,000	4,300,000	54,900,000
June, 1938, actual	100,351,000	48,293,000	4,284,000	52,577,000
Change from year ago	+4.3%	+4.7%	+0.4%	+4.4%
July:				
July, 1939, forecast	108,910,000	52,600,000	4,200,000	56,800,000
July, 1938, actual	106,927,000	*47,474,000	4,277,000	51,751,000
Change from year ago	+1.9%	*+10.8%	—1.8%	+9.8%
August:				
August, 1939, forecast	109,180,000	52,900,000	4,200,000	57,100,000
August, 1938, actual	108,585,000	50,459,000	4,829,000	55,288,000
Change from year ago	+0.5%	+4.9%	—13.0%	+3.3%
September:				
September, 1939, forecast	105,320,000	49,100,000	4,000,000	53,100,000
September, 1938, actual	102,029,000	46,058,000	3,528,000	49,586,000
Change from year ago	+3.2%	+6.6%	+13.4%	+7.1%

* Although the July, 1939, estimate of domestic demand was 10.8 percent greater than the abnormally low demand of July, 1938, it was only 6 percent over the estimated normal demand for that month.

As We See It . . .

COOPERATION WINS

RESTORATION of the crude price together with an added stability is proof of what the industry can accomplish by getting together. The shutin of the wells was a drastic procedure, but it is evidence that the industry and its control agencies can act together to meet emergencies. There was, of course, some dissension in the ranks, but all parties affected joined in for the general benefit. There could be endless argument as to whether or not (financially) the loss was worth the gain. There could be raised question as to its legality. But at all events the object was accomplished—and more.

For one thing, the burden of too-heavy stocks has been removed. For too long there has been talk of having too much crude on hand, and it was a revelation to the statisticians to find that two weeks of drastically reduced production would cause a real shortage of oil available for refining. This still leaves the gasoline stock situation to bother some, but even that will be viewed with less dread. However, it can be anticipated that all stocks will be watched closely at least for the next several months while the now more nearly united industry remembers that moderation is what will avoid chaos.

AND "more nearly united" is probably the most important thing that has come from this upheaval.

It will be recalled that the start of the shutdown was accompanied by acrimonious and vindictive vituperation by some leaders among producers and by some regulatory officials against those among the purchasers of crude oil whom they assumed had conspired to bring about the reduction in prices. After this first burst, sober thinking set in, so that in the end there seems to have come a realization that there are always at least two sides to an argument. Even the most implacable gained some element of realization that the biggest of the corporations and the owner of the meanest stripper lease have this much in common: they are both trying to make a living out of the oil business.

PERHAPS the troubles they are having in Europe served in part to demonstrate that the general public has but slight interest in the internal affairs of the oil industry, so that more and more the ill-advised airing of family matters in the newspapers and over the air fell on deaf ears.

Then all the interested parties came down to earth. The problem was faced sanely and all is healed.

Fortunately, the memory of the public is short. Unless the conflict is renewed by the industry itself, there need be no more appeal to the popular prejudice upon which the proponents of federal control may feed to strengthen their campaign.

But the memory of the oil industry should not be short in this particular; cost of the victory that has been won is too great to make it a habit.

THE CAUSE of conservation has been furthered. Louisiana, for instance, where there has been some criticism, joined in the shutdown and further has moved to keep its production more in line with what other principal producing states have done in limiting output. Illinois is beginning to lean toward the movement and whether or not the law makers of that state can be brought into line, there is a tendency among the operators there to do something about it.

Conservation officials are careful always to point out that curtailment of oil production is purely a means of conserving a natural resource and is not a matter of price. This legal fiction is soon dissipated when it is realized that one great act of conservation is to produce stripper wells to the ultimate—and to recover that oil the price must be at a level to make the recovery pay for itself. In this, restoration of prices has been conservation, and the acts of the control bodies in assisting to bring it about have had justification.

BUT the biggest gain has been the awakening of the several factions in the industry to the fact that they have all in common. In effect, and for the moment, there is a truce. It is inevitable that hostilities will be renewed. Let us hope that when they are, it can be on a basis that will permit sane arbitration within the industry and without appealing to public prejudices and inviting more governmental control.—J.K.R.

ARE EXCESS STOCKS "MENTAL?"

AMONG the interesting things, from a national standpoint, brought out at the state-wide (it should have been called nation-wide) hearing at Austin, Texas, last Monday, were some new lights on the crude oil storage situation.

As we review them we wonder if maybe the same things could not have been brought out on this matter of excessive gasoline stocks as well.

We have been told vociferously, scientifically, statistically and continually, that crude oil stocks were too high. For several years there has been a consistent effort, with success, made to reduce such stocks. At the Austin hearing the audience was told again that "necessary crude stocks" including tank bottoms and pipe line and tanker fills, should be from 205,000,000 to 260,000,000 barrels, with the great majority of those testifying saying that a figure around 220,000,000 to 225,000,000 barrels was "about right." (It was interesting that Standard Oil Company [Indiana] with heavy crude stocks thought that the 205,000,000 figure was right and that Humble Oil & Refining Company, facing a refinery shut-down, thought 260,000,000 was correct!)

NOW when the shut-down started crude oil stocks were around 268,000,000 barrels and it has been calculated that about 20,000,000 barrels at the most were withdrawn during the shut-down. This would mean that as the hearing took place the industry actually had approximately 23,000,000 barrels more crude than was necessary if the average estimate as to what was "necessary" were accepted.

But testimony offered at the hearing showed that the shut-down had put some of the biggest refining companies in the country in such shape that they would have been faced with stoppage or material reduction of operations within a few days had not the producing shut-down been lifted.

We cannot reconcile the recommended stock figure with the actual refining situation.

True, we can appreciate that crude oil stocks in some parts of the U.S.A. may be excessive while a shortage might prevail in others—but the economists apparently figure that a barrel of oil is a barrel of oil.

THAT Austin hearing convinced us that despite all statistics on stocks, which have been presented for a long time, the practical aspects of the present situation are that further reduction of stocks generally would be dangerous.

All of which brings up the question of gasoline stocks.

Statistically, there seems to be too much gasoline in storage. But the figures presented at Austin, which accounted for about half of the gasoline in storage in the United States revealed some facts which are illuminating, if not startling.

Figures presented on gasoline stocks did not include California where, on August 13, 1939, gasoline stocks were up 12.9 percent over a year ago and represented roughly 20 percent of all stocks reported to the American Petroleum Institute, and roughly 18.5 percent of all estimated gasoline stocks on hand.

This actually would mean that the stocks reported on at the Austin hearing represented about 61.5 percent of all stocks east of California.

Now those companies reporting showed that their stocks had decreased around 4,000,000 barrels during the 12 months ending August 1, 1939.

But be that as it may, we wonder if this talk about excessive gasoline stocks is fully warranted. The crude stock talk apparently is not. We wonder if gasoline stocks, practically, are as excessive as they are thought to be.

If they were excessive last week, the war news of the week-end should wipe out the mental excess.

Or, are we, and a lot of other people, including some rather heavy holders of gasoline, crazy?—R.L.D.

Large Oil Volume Found Per Drilling Dollar and Foot

By WILLIAM H. STRANG, Staff Writer

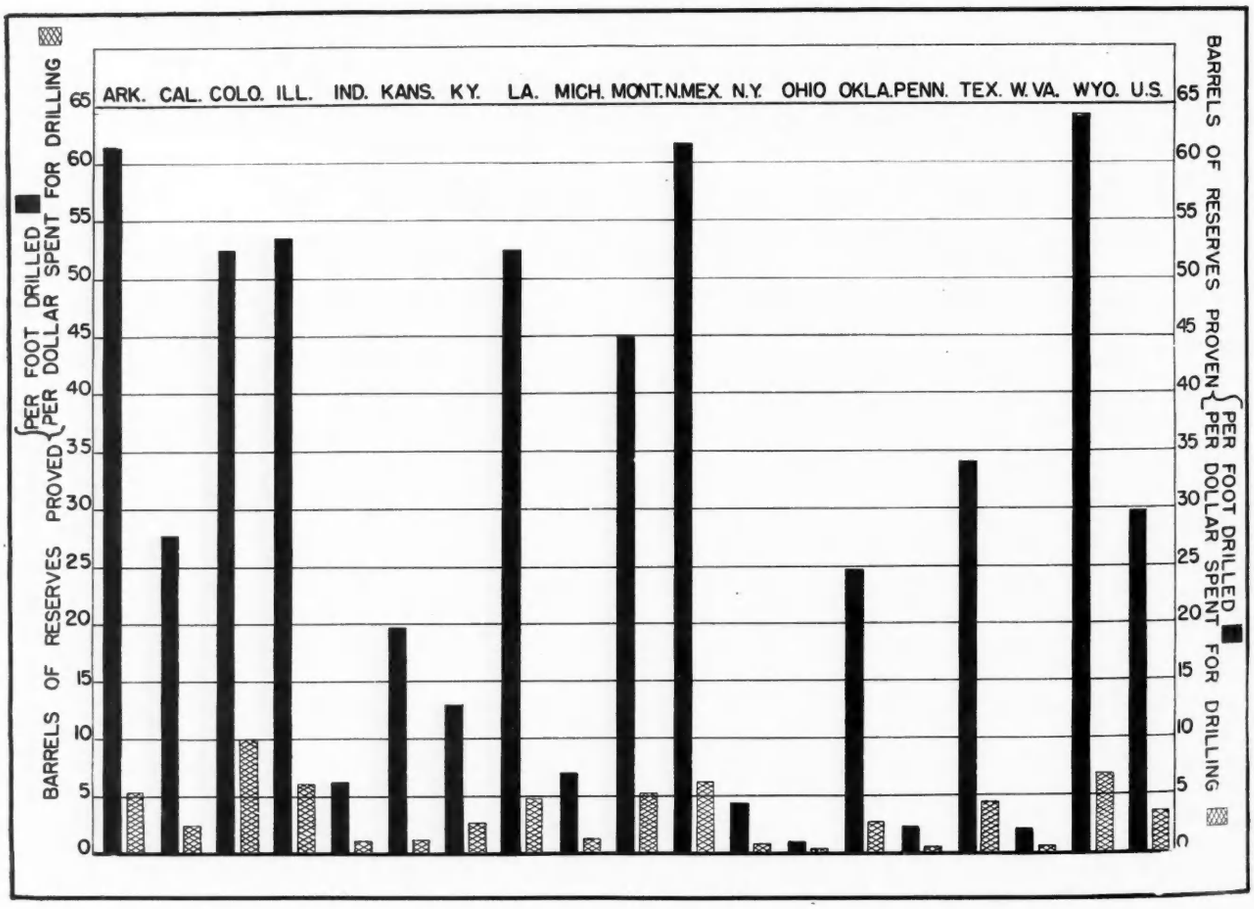
AN ANALYSIS of discovery rates and drilling expenditures in the United States during the 4-year period ended December 31, 1938, reveals that the operator with average success found $3.89 worth of oil for every dollar spent for drilling activities, and 29.8 barrels for every foot drilled.

The difficulty of obtaining accurate information upon the total expenditures of the drilling-producing industry during this period, or any other period, precludes the possibility of an actual profit calculation on finding and producing oil, but it is certain that high production costs, slow rates of investment return, and burdensome taxes whittle the imposing $3.89 figure down to an actual profit in the neighborhood of a few cents per dollar spent.

Discovery Rate Twice Production Rate

During the 4 years the reserves discovered were sufficient to provide an 8½-year supply for the nation at the average rate of production established during the 4 years.

Total reserves estimated by the American Petroleum Institute increased from 12,177,000,000 barrels at January 1, 1938, to 17,348,146,000 barrels at


BARRELS OF RESERVES PROVED PER FOOT DRILLED ■ PER DOLLAR SPENT FOR DRILLING ▨
ARK. CAL. COLO. ILL. IND. KANS. KY. LA. MICH. MONT. N.MEX. N.Y. OHIO OKLA. PENN. TEX. W.VA. WYO. U.S.
0 5 10 15 20 25 30 35 40 45 50 55 60 65
BARRELS OF RESERVES PROVEN PER FOOT DRILLED ■ PER DOLLAR SPENT FOR DRILLING ▨

January 1, 1939. This increase in reserve supply occurred in the face of rising production that drained 4,588,131,000 barrels from reserves.

Therefore, 9,759,277,000 barrels of reserves were proved by drilling in the 4 years, which means that if the actual production of the period was taken only from new reserves as they were found, that at the end of the period a supply would still exist sufficient to assure production for 4½ years more without draining a single barrel from the reserve level of January 1, 1935. This could be done with an absolute cessation of drilling for the entire 8½ years.

Largest contributor to the increase in reserves was Texas, where 5,754,008,000 barrels were proven; next largest was Louisiana, with 981,929,000 barrels of new reserves. Oklahoma followed with 757,423,000 barrels; then California with 599,795,000 barrels of additional reserve.

Illinois reserves increased by 247,955,000 barrels, 178,151,000 barrels of which were found in 1938.

Indiana made the smallest contribution, finding only 4,438,000 barrels of fresh supply.

Reserves Found Per Foot Drilled

An investigation of the effort put forth to discover these reserves reveals interesting facts. The nation as a whole, in drilling 327,340,847 feet to prove up 9,759,277,000 barrels of reserves, found 29.8 barrels of reserves for each foot drilled.

The large Wyoming type structures with a large amount of closure proved the most prolific in relation to the effort expended to tap them, as every foot drilled in that state resulted in the discovery of 64.2 barrels of reserves, the highest average in the United States. However, the unfavorable market situation that existed in this district during most of the period under consideration probably subtracted tolls from this gain.

Close behind were New Mexico and Arkansas with 61.7 and 61.5 averages, respectively. Illinois followed with 53.5 barrels of reserves added per foot drilled, while Colorado and Louisiana were the same at 52.5.

Montana next with 45 barrels for each foot drilled established the fact that large reservoirs that can be tapped with relatively little drilling are characteristic of the Rocky Mountain States.

Texas found 34.1 barrels of oil in place per foot of drilling, and other states averaged less than that as shown in the sixth column of the accompanying table.

On a cash basis, drilling, in itself, again proved surprisingly remunerative. The average well, including dry, gas and oil, drilled during the 4 years was 2972 feet deep and at an average cost per foot of $8.40 represented an investment of $24,965. This average well found 88,600 barrels of hitherto untapped reserve, or 3.55 barrels per dollar of drilling expense.

For every drilling dollar spent, Colorado delivered an indication of 10 barrels of recoverable reserve oil in place underground. Wyoming next with 6.90 barrels of reserves added per dollar spent for drilling, then New Mexico with 6.3 barrels and Montana with 5.10 barrels per dollar expenditure establish another interesting sidelight upon Mountain States operations.

Illinois found extensive reserves at relatively small cost, locating 6.10 barrels of recoverable oil for each

Comparison of United States Reserves Found Per Foot Drilled, Per Dollar and Per Well Over Four-Year Period

STATE	[1]Total Reserves at January 1, 1935	[1]Total Reserves at January 1, 1939	[2]Barrels Production 4 Years 1935-1938	Reserves Proved 4 Years 1935-1938	Footage Drilled 4 Years 1935-1938[3]	Barrels of Reserves Proved per Foot Drilled	Drilling Expenditures 4 Years 1935-1938[3]	Barrels of Reserves Proved per Dollar Spent for Drilling	[3]Wells Completed 4 Years 1935-1938	Reserves Proved per Well Drilled	Average Yearly Rate of Production Established 1935-1938 Barrels	Years Required to Recover Reserves Proved 1935-1938 at Average Prod. Rate Established 1935-1938	4-Year Weighted Average Price of Crude Oil,[6] per Barrel	Total Value at Well of Reserves[7] When Recovered	[8]Dollars Realized per Dollar Spent for Drilling
Arkansas	75,000,000	188,246,000	51,307,000	164,553,000	2,671,788	61.5	$831,176,000	5.30	577	285,500	12,826,750	12.30	$0.83	$136,578,000	$4.38
California	3,500,000,000	3,188,763,000	911,032,000	599,795,000	21,262,042	27.3	252,929,000	2.50	4,954	121,000	227,758,000	2.63	0.95	569,805,250	2.44
Colorado	12,000,000	17,713,000	6,234,000	11,947,000	227,807	52.5	1,196,000	10.00	60	199,000	1,558,500	7.68	1.03	12,305,410	10.28
Illinois	35,000,000	242,947,000	40,105,000	247,955,000	4,646,071	53.5	40,704,000	6.10	2,453	101,000	10,027,000	24.74	1.24	307,464,200	7.55
Indiana	5,000,000	6,031,000	3,407,000	4,438,000	611,189	7.2	3,864,000	1.10	644	6,900	851,750	5.21	1.26	5,591,880	1.44
Kansas	400,000,000	613,230,000	243,378,000	456,608,000	23,114,142	19.7	332,180,000	1.37	7,335	62,250	60,844,500	7.51	1.16	538,797,000	1.62
Kentucky	35,000,000	37,545,000	22,198,000	24,743,000	1,930,798	12.8	9,115,000	2.70	1,822	13,600	5,549,500	4.64	1.24	30,681,370	3.36
Louisiana	375,000,000	1,040,246,000	316,673,000	981,929,000	18,700,913	52.5	202,270,000	4.90	3,785	258,500	79,168,250	12.39	1.11	1,089,941,000	4.44
Michigan	45,000,000	42,749,000	63,475,000	61,224,000	8,777,675	7.0	49,230,000	1.25	3,282	18,650	15,868,750	3.86	1.23	70,530,552	1.53
Montana	60,000,000	104,471,000	21,168,000	65,639,000	1,459,477	45.0	12,860,000	5.10	643	102,000	5,292,000	12.42	1.43	93,863,773	7.29
New Mexico	350,000,000	703,251,000	122,356,000	475,607,000	7,693,320	61.7	76,738,000	6.30	2,074	229,500	30,589,000	15.55	0.87	413,778,090	5.39
New York	40,000,000	40,490,000	19,413,000	19,803,000	4,460,893	4.4	25,640,000	0.80	2,705	7,375	4,853,250	4.11	2.42	48,165,260	1.88
Ohio	30,000,000	26,358,000	14,775,000	11,133,000	11,143,034	1.0	58,430,000	0.20	5,843	1,915	3,693,750	3.02	1.59	17,701,470	0.30
Oklahoma	1,200,000,000	1,162,370,000	795,053,000	757,423,000	30,559,371	24.8	285,320,000	2.70	10,190	74,500	198,763,250	3.81	1.15	871,036,450	3.05
Pennsylvania	240,000,000	200,460,000	69,483,000	29,943,000	13,172,001	2.3	67,698,000	0.45	9,422	3,175	17,620,750	1.69	2.18	65,275,740	0.96
Texas	5,500,000,000	9,447,764,000	1,806,244,000	5,754,008,000	168,965,982	34.1	[4]1,278,813,000	4.51	51,233	112,500	451,561,000	12.70	1.06	6,099,248,480	4.77
West Virginia	25,000,000	24,468,000	15,269,000	14,737,000	6,731,670	2.2	33,052,000	0.50	2,732	5,400	3,817,500	3.84	2.11	31,095,070	1.03
Wyoming	250,000,000	261,133,000	66,558,000	77,691,000	1,212,674	64.2	11,252,000	6.90	388	200,200	16,039,500	4.67	0.95	73,806,450	6.56
United States	12,177,000,000	17,348,146,000	4,588,131,000	9,759,277,000	327,340,847	29.8	2,749,347,000	3.55	110,142	88,600	1,147,032,750	8.52	$1.073	$10,476,665,395	$3.89

[1] Estimates furnished by American Petroleum Institute. [2] From Minerals Resources and Minerals Yearbook. [3] From the records of The Oil Weekly, except as otherwise noted. [4] Estimate based upon Arkansas Board of Conservation figures for 1937-38.
[5] Estimate based upon Texas Mid-Continent Oil & Gas Association figures for 1936-37-38. [6] Weighted average crude oil prices by states for 1935 and 1936 from Minerals Yearbook for 1938, page 852. Weighted average prices for 1937 from Bureau of Mines annual summary, and those for 1938 from Bureau of Mines figures for first 11 months. The Oil Weekly estimate for December made with aid of weekly reports from the American Petroleum Institute. Average crude prices by states for 1938 arrived at by applying the small national decrease to state prices for preceding year. [7] Based on weighted average crude oil prices for period 1935-1938, and an expected continuation of those prices throughout the entire period required to produce the reserves found in the four-year period. [8] This is in no sense an estimate of the actual profit resulting from drilling operations, but a close approximation of the values returned for each dollar spent for exploration ahead of the drill and actual equipment and labor costs of drilling. Cost of production, various taxes and overhead items, and interest charges are not included.

dollar put into the ground. Louisiana discovered 4.90 barrels per dollar, and the ratio in Texas was 4.51.

The averages for other states are forceful arguments for the necessity of economical production. The averages shown in the eighth column of the accompanying table indicate that the normally successful Eastern States producer operated at a loss throughout the period, finding only a fraction of a barrel of oil for each dollar spent.

The margin of potential profit was small also in Michigan, Kansas, and Indiana, where production costs and all other expenses except those of drilling had to be held to less than one half the drilling cost if a profit was made at all.

The largest potentially productive wells were drilled in Arkansas, where each well made available an average 285,500 barrels of oil reserve, and in Louisiana, where the per-well average was 258,500 barrels. New Mexico, with 229,500 barrels of reserves indicated per well drilled, was the only other state above the 200,000-barrel mark.

Other Mid-Continent states were below the Texas average of 112,500 barrels per well, as was Illinois with a 101,000-barrel average.

The smallest average wells were those in Ohio, where each new well served to locate only 1915 barrels of oil.

Discovery Rate vs. Rate of Production

If the average rate of production established during 1935-1938 should continue for several more years, which is quite possible, it appears that most producing states found oil at a much faster rate than that at which it was produced.

Arkansas, Louisiana, and Montana found more than a 12-year supply. New Mexico reserves were increased by an amount that should keep 1935 reserve level intact for 15½ years. Colorado and Kansas proved up a 6-year supply.

Illinois reserves were increased by an amount that would produce at the 1935-1938 average rate of 10,000,000 barrels yearly for 24¾ years, but with production for 1939 averaging approximately 210,000 barrels daily, it is obvious that this figure has no meaning, and that predictions that the Illinois reserves will be quickly depleted are well founded.

Texas' new reserves were adequate for 12.7 years of production at the average rate.

The only state to strike a balance was New York, where 4 years of drilling found a 4.1 year supply of oil.

The only prorated states to drain reserves more rapidly than they were replenished were Oklahoma and California, where the increase in reserves yielded only 3.81 and 2.63 years, respectively, of available supply.

Michigan and the Eastern States, with the exception of New York, all failed to keep discovery levels at the same height as production. Pennsylvania reserves were increased by only a 1.69 year supply throughout the 4 years of drilling.

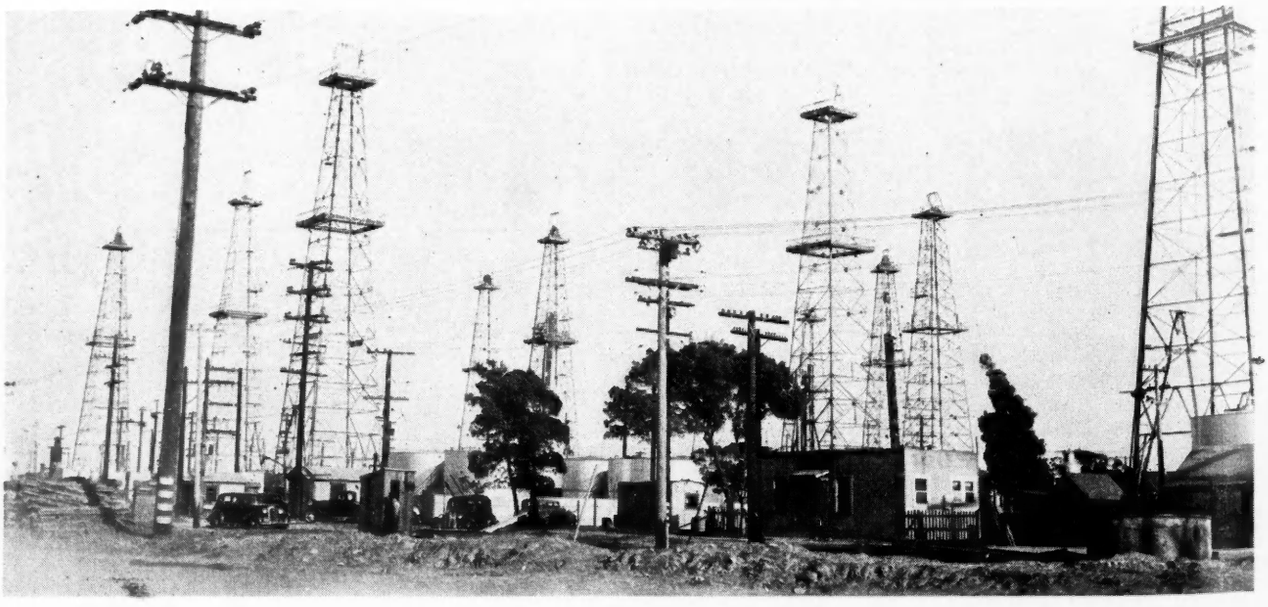
Return for the Drilling Dollar

The last column on the accompanying table shows the wide variety of returns upon drilling expenditures.

More profitable than the average was drilling in 8 states: Arkansas, Colorado, Illinois, Louisiana, Montana, New Mexico, Texas and Wyoming. Less profitable than the indicated national average was drilling in California, Indiana, Kansas, Kentucky, Michigan, New York, Oklahoma, and West Virginia. In many states drilling expenses must have been the largest item by far if a profit was shown.

In two states the return was not even sufficient to repay the expenses of drilling, and production and other costs would act only to force the producer farther into the red. Each dollar spent for drilling in Ohio located only that amount of oil which when brought to the surface would sell for 30 cents. Pennsylvania drilling expenditures located oil which, when recovered, was worth only 96 cents per dollar expended for drilling.

Each well shown here will have to ultimately produce 88,600 barrels if they are to come up to the average of the nation during the period 1935-1938 inclusive.



Pumping Series Article No. 19

It's Regular Inspections That Count in Pumping Unit Care

By JAMES R. CHAMBERS, The Texas Company, Olney, Illinois

THERE are many different factors to consider in selecting and installing pumping units; namely, depth, well conditions, stress analysis and others. However, even after the installation of units, they will not be efficient operating devices unless the responsibility of adequate and proper field maintenance is assumed. Of course, the care and operation of pumping units, like any other piece of machinery, will be multiplied several times by improper installation practices.

Fortunately, with modern equipment, adequate and proper field maintenance is not a difficult problem. But, so frequently it is not realized that to achieve the best results it must be a task performed regularly and thoroughly. For, maintenance is not a repair job, but one of preventing breakdowns and keeping every part in the best of condition so that the utmost in efficiency is obtained—which invariably will lower operating costs.

In order to obtain the most efficient results in the installation of pumping units, special attention should be given to proper balancing, such as beam weights and counter weights. To obtain the maximum utility, special care should be given to the hold-down bolts, and particular attention to all devices that are used to prevent vibration, such as, initial foundation, secondary base and mooring assembly.

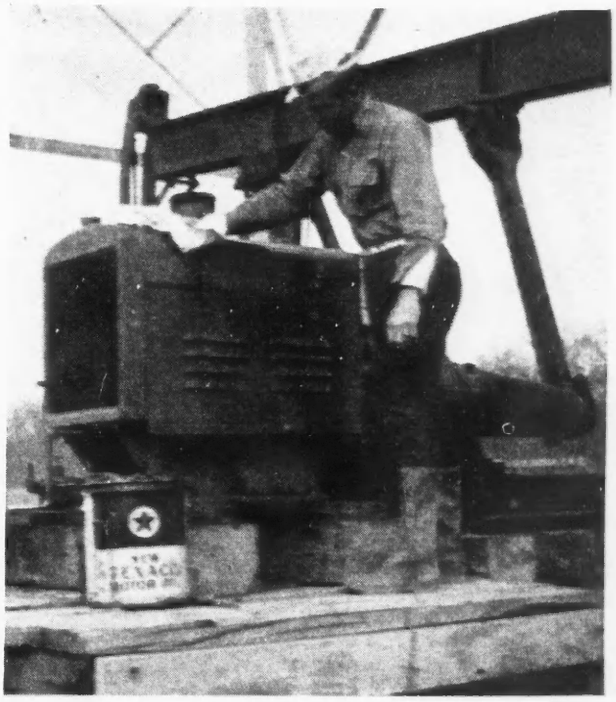
Lubrication Duties

In the proper maintenance of the engine, the most important factor is to see that it is properly supplied with the specified grade of oil at all times. As conditions determine the exact grade of oil to be used, only oil of a recognized brand and grade should be utilized. This should be changed in a reasonable length of time, and for the various climatic conditions. Extreme caution should be given to the instructions pertaining to S.A.E. recommendations for that particular season.

Engines that are wholly operated from natural gas are recommended to use a lighter grade of oil. In the process of lubrication care should be taken in regard to starting cold motors and excessive speeding or motor racing should be avoided.

The removal of grease and oil accumulation should be practiced, as this is a detrimental factor in both the performance of the motor and external appearance. Excessive accumulations of grease and oils on the engine assembly have the tendency to retain motor-heat, causing irregular service. This can be eliminated by regularly cleaning the accumulated parts with a gasoline-saturated cloth.

In checking the entire lubrication system, extreme



Removal of excessive oil and grease accumulations is more important than generally realized.

caution should be made in the initial examination of the drainings found in the oil changes. This will determine the condition of operation. Oil should be changed at least every 100 hours of operation, or oftener if examination of the drainings indicate the necessity.

All bearings, both on the unit and motor should be checked daily. On finding a warm bearing, oil should be added and the bearing allowed to run slowly; if cooling does not result in a reasonable length of time, the motor should be stopped and the bearing cleaned.

Checking Cooling System

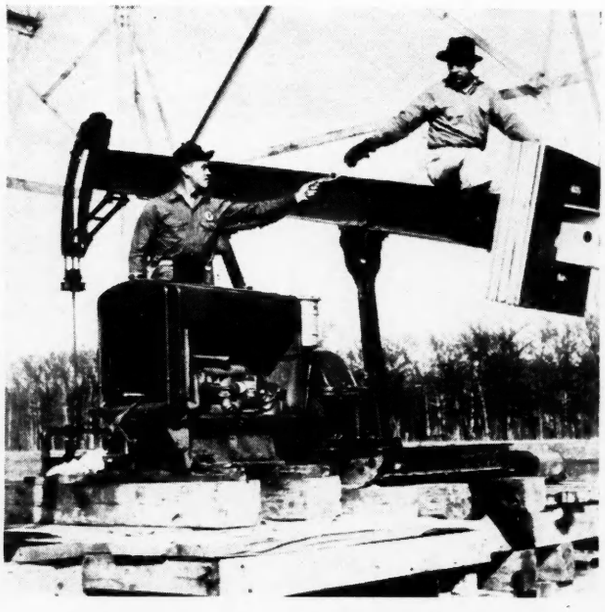
The cooling system should be checked daily, and only clean, soft water should be used. During the summer months engines can be more efficiently operated by the removal of the motor covers. This will insure a more complete cooling effect and will allow the motor to perform more effectively.

In the operation of units during the months of severe weather, the engines shoud be kept covered at all times. When an engine is to be kept idle for any length of time during extreme weather conditions, care should be taken to properly drain the radiator, remove the spark plugs and pour in at least two ounces of a light lubricant. This will make future starting easier, and will act as a corrosive resistant. If the motor is to be idle for a greater length of time, the entire ignition system should be removed and stored in a dry place, and all engine parts should be covered with a rust resisting compound. To insure the clutch assembly, all grease openings should be thoroughly greased with an extra heavy grade of water-resisting lubricant.

For winter operation it is advisable to prevent circulation freezes by the adding of an anti-freeze. An inexpensive solution is a solution comprised of denatured alcohol and water; or a solution of

Excessive Vibration Should Be Eliminated by Keeping Bolts Tight

Keep the polish rod clamp tight



Tightening counter weights on walking beam

Eliminating excessive vibration by tightening mooring assembly bolts.

ethylene glycol, which is a dependable formula and is non-corrosive and will in no sense be detrimental to the radiator or the cooling system.

In the supplying of water to the engine cooling systems extreme caution should be taken so as to add only soft water that contains no lime or alkaline contents. A radiator filled with water that contains these elements in strong quantities will eventually result in the clogging of the radiator and entire cooling system, and corrosiveness is frequently found. In case of leaky connections or water jacket leaks, a solution of this type is also detrimental to the entire prime mover as the pistons and cylinders are affected by the forming of scale and the cylinder walls become corroded with lime formations.

To insure a perfect and adequate cooling system, radiators should be completely drained and washed at least twice a year. This process will remove the accumulated particles of rust, lime, radiation scale, and other elements. A solution suggested as an efficient and effective cleanser is a warm solution of soda water. This should be added after the water has been drawn from the motor, and radiator. A proposed amount is a quantity equal to one half the capacity of the radiator and engine. After this solution is added to the cooling system the motor should then be started and allowed to run for a short period of time, as this will allow the soda solution to effectively clean and react on the entire circulatory system. This solution should then be drained and flushed, and a new supply of fresh water added for the permanent operation of the motor.

Lubrication One of the Most Important Maintenance Operations

Gear boxes need the proper quantity of oil if they are to give good service.

All bearings, both on the unit and engine should be checked daily. When a warm bearing is found it should be oiled, and then watched to see if this corrects the trouble.

Only the recommended grade of oil for the particular season should be used. This should be checked daily, and be changed every 100 hours of operation.

Care of V-Belts

In order to insure a smooth-running beam-stroke, the daily checking of all V-type belts should be included in the daily routine. After constant service the belts are subject to stretching and this prevents

Checking V-belt drives daily and taking up the stretch will provide smooth-running beam operation.

Spark plugs should be inspected once each week for carbon and spacing.

the fan from properly cooling the motor and causes jerky performance.

During extreme weather conditions special attention should be taken in the proper adjusting of the V-belt, and if at all possible, a belt should never be allowed to remain in service without some type of shelter. This can be economically arranged by the construction of a sheet-iron cover. In the adjusting of a V-belt, caution should be given as V-belts should not be run as tight or taut as flat belts.

The air cleaners should be included in the weekly inspection. They should be serviced and changed at the same time as the crank-case oil. In replacing new oil for the air cleaners, it should never exceed 10 S.A.E.

Checking the water supply daily is of utmost importance. In winter anti-freeze should be added, and testing of the solution included in the daily chores.

The spark plugs should be inspected at least once every week. All carbon should be removed and the clearance gap should be set at the desired space, recommended by the manufacturer.

When operating an engine with natural gas, a daily inspection should be made in regard to the regulatory and carburetor system. A mixture of gas without the required amount of air will cause irregular performance. Neither should the engine be allowed to operate on a lean mixture.

All leaky gas connections should be replaced, as this is a resulting factor of the improved functioning of the engine, and the risk of an explosion. The regulator should be kept free from pipe-line rust and other accumulations.

In making a daily inspection of pumping units all abnormal noises or knocks should be located and accounted for. An engine should not be allowed to operate with loose bearings, if unable to locate the exact cause it should be shut-down until given the proper attention required.

COSTS TAKE A TRIMMING

WHEN "CATERPILLAR" DIESELS TAKE A HAND!

A tough slush-pit job near Boyleston, Illinois. But this "Caterpillar" Diesel D7 Tractor, and its LaPlant-Choate bull-dozer, wound up the work in a few hours — and with very little fuel-cost. Notice the Hyster winch.

Next to a "Caterpillar" Diesel, itself, this piece of extra equipment will undoubtedly be one of the best investments you'll ever make! Almost doubling the tractor's drawbar-pull, it can cut the effort, time and cost on many a job — and increase the machine's usefulness a number of times over!

A "Caterpillar" Diesel D6 Tractor, equipped with a Cardwell side-boom, wrapping a pipe-line as it lays it in the trench. This is one of many jobs that can be done with a profit — so long as you have profitable equipment. And that's what you've certainly got with a "Caterpillar" Diesel Tractor!

THERE'S not a power job in the oil-fields that "Caterpillar" Diesel Tractors aren't doing — digging slush-pits, laying pipe-lines, moving rigs, servicing wells, hauling supplies and building roads. And though those jobs are all different, there's one phase of the work that's always the same. *It's low in cost!*

And here's the reason for that: You've got traction for time-saving . . . fuel-economy for money-saving . . . and stamina and precision-build to save both time and money on up-keep. And then, *you've got an additional saving of time,* when you do meet with maintenance-needs. Because no matter where you go to work, you *can't get far* from "Caterpillar" parts-and-service facilities. They're the *widest spread* and *most complete* of their kind in the world!

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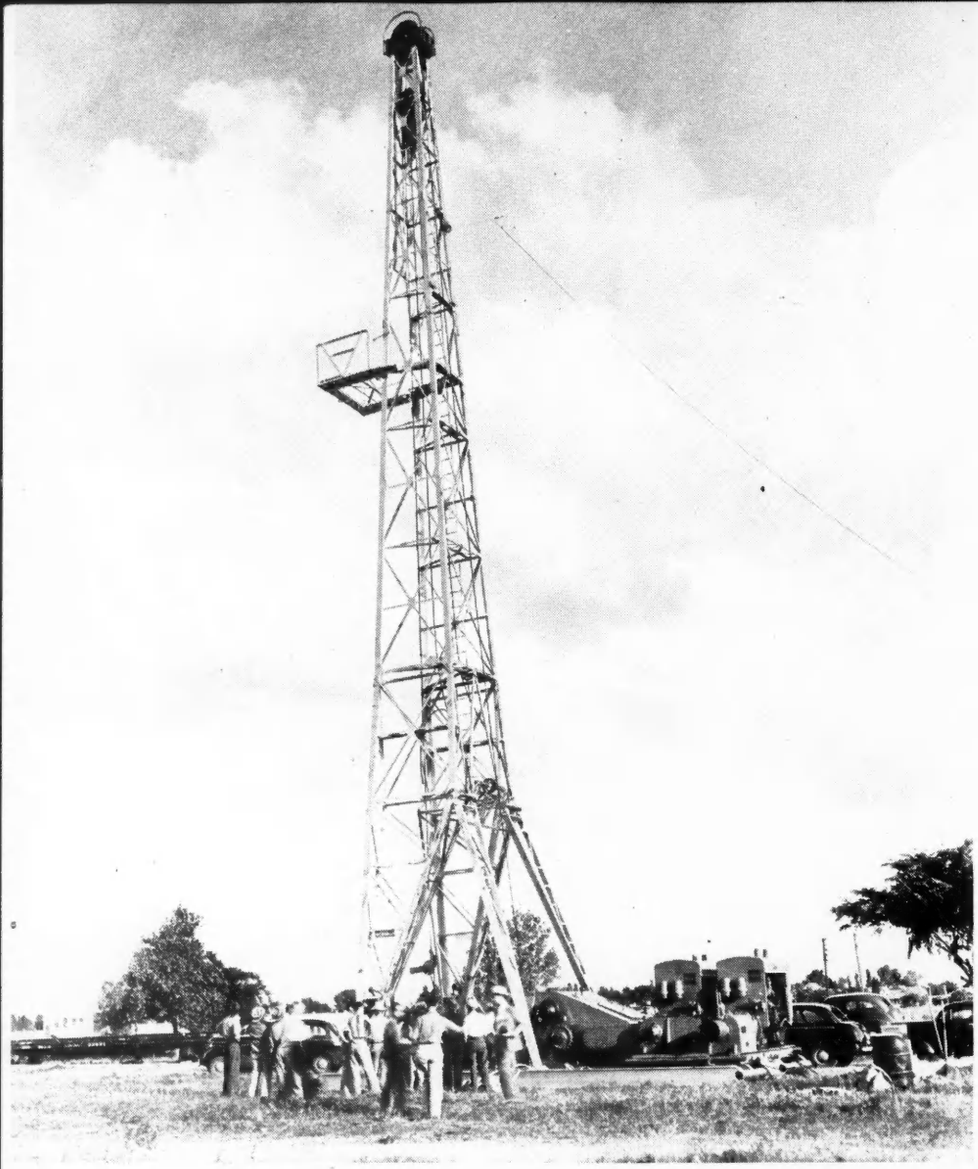


Derrick in position and ready to be fixed with four bolts. To lower, the mast is let down by braking the draw works.

Derricks Being Assembled Horizontally on Ground And Raised as Unit

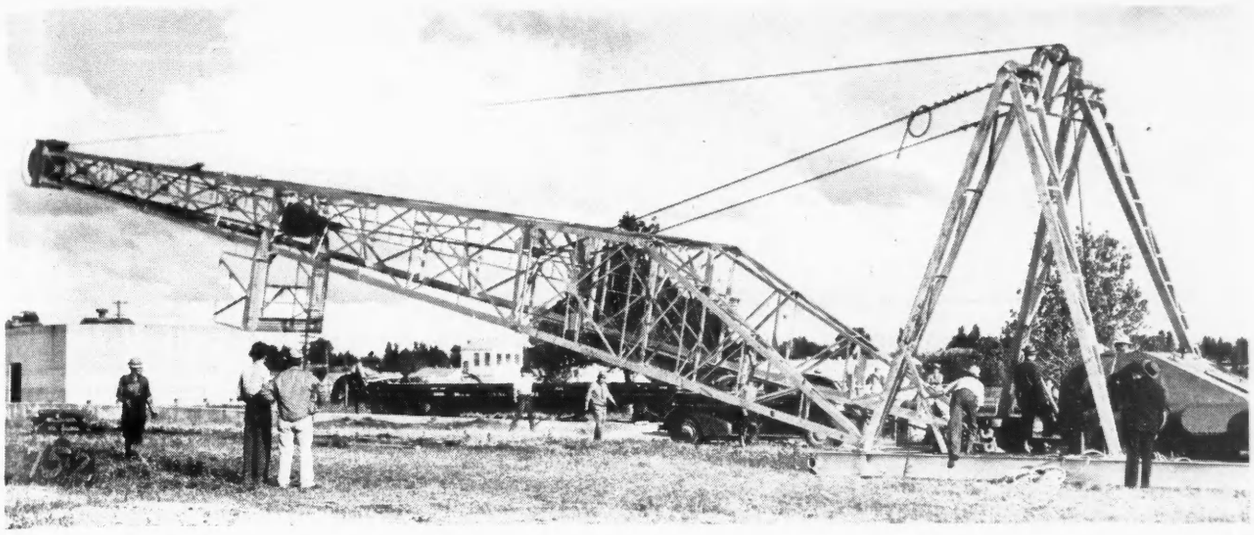
By FRANK B. TAYLOR, Staff Writer

A NEW method evolved for the erection of steel derricks, whereby they are assembled horizontally on the ground and then raised to their upright position as a single unit, recently has been applied in a number of fields; and records indicate that the procedure is another achievement in the saving of drilling time.

Currently, the technique is being used in the drilling of exploratory holes in Kansas and Illinois. Skelly Oil Company, with Claude Drilling Company as contractor, has one such unit drilling in Barton County, Kansas, and another standing over its second 3500-foot hole. Zephyr Drilling Company has a similar derrick on a wildcat location in Illinois; and other firms also are using the method.

Departing from routine construction, the derrick is fabricated in five sections. Each is bolted and welded as a unit. Assembly bearings joint the section. When completely erected the derrick has a height of 87 feet, sufficient to care for either regular shallow or slim-hole drilling equipment.

Instead of raising the derrick piece by piece, each of the five units comprising the mast are so fabricated the structure is completely assembled in a horizontal position on the ground. When this work is done and checked, the derrick is jack-knifed into a vertical position



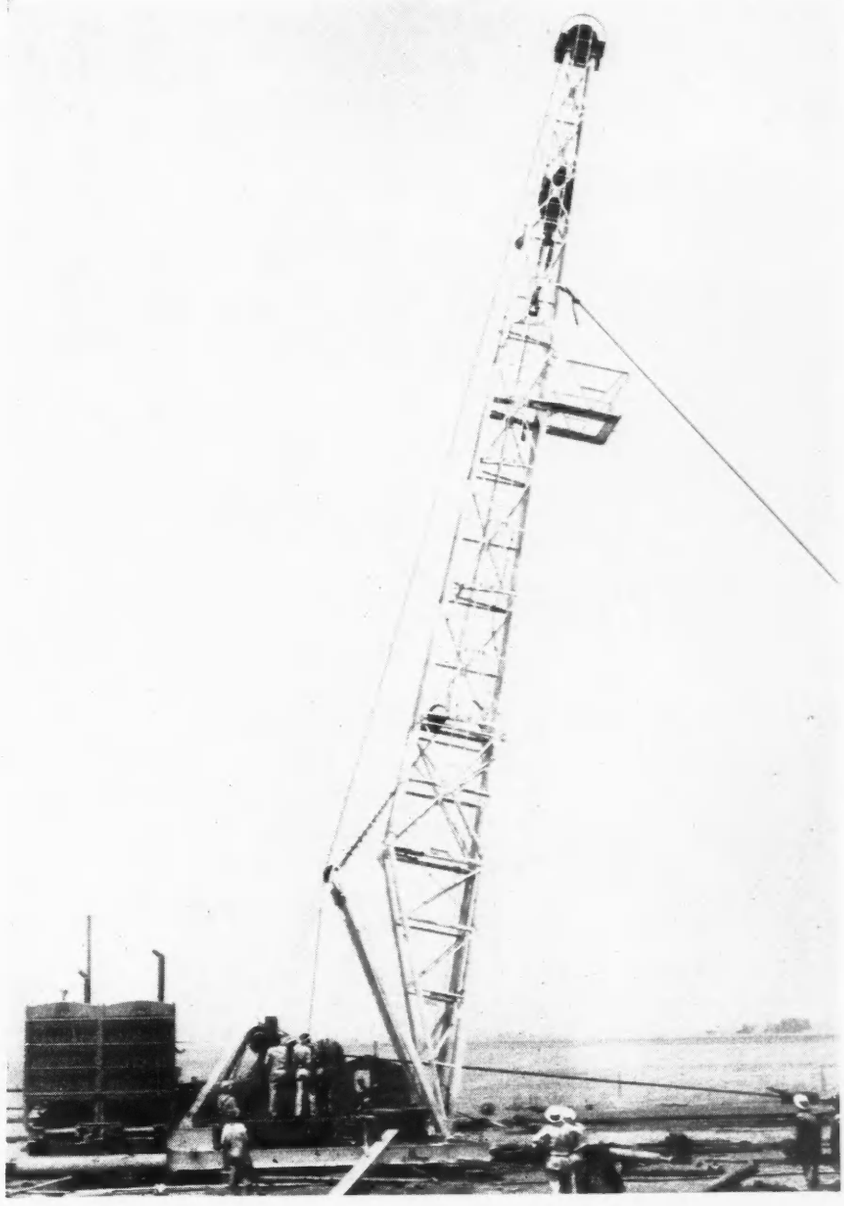
Assembled derrick is being raised to upright position with draw works. Note the fourble board upfolding to position. The speed of lifting the mast to a vertical position (45 seconds in this instance) produced the slight blur of the photograph where it pictures the uppermost section.

by the draw works. The joint of the jack knife which serves as the bearing for the lifting operation is at the front end of the base. To dismantle preparatory for moving, the process is reversed.

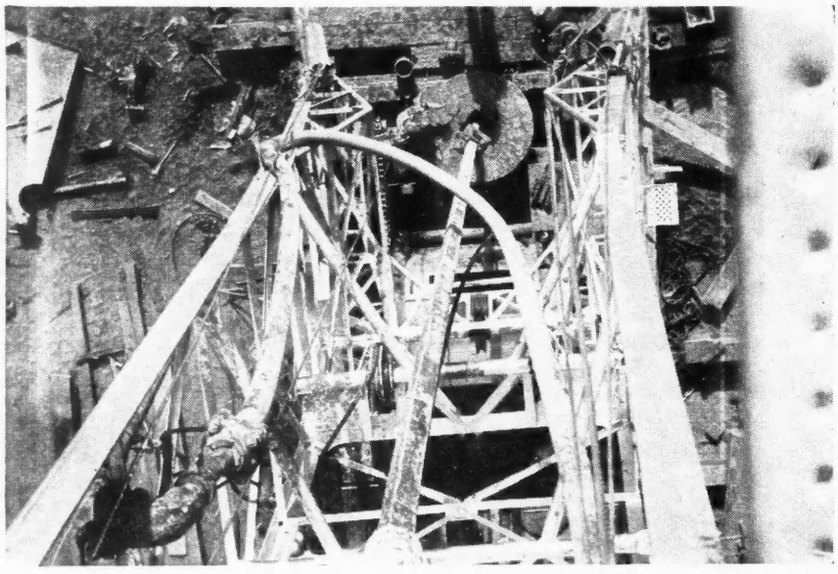
Construction

The 87-foot height is divided into three sections of approximately equal length. The upper piece is a single unit as is the mid-section, and the lower third is in two units. This construction divides the derrick into four convenient sections. A fifth part of the complete assembly is the base, separate from the lower unit.

Top of the derrick is 2½ feet by 3½ feet. It is complete with crown block and safety rail fixed in position. The block carries two alloyed sheaves, 36 and 30 inches, mounted on roller bearings. A dead line sheave, 18 inches in diameter, is bushed on a 5½-inch pin. The block is made so that another sheave can be added to made it a five-sheave crown block, and is arranged for either cable tool or rotary work. This, however, without the necessity of moving the block



Lacking but a few feet of being in position, the derrick is being assembled on Skelly Oil Company's Hickey 1, CSW 15-18-15w, near Hoisington, Barton County, Kansas. This test went to 3590 feet. Since then the derrick has been moved and is drilling another well.



A glance down to the floor from the fourble board. The 67-foot front opening apparent in the upper portion of the picture. Rig is drilling rotary location.

into an offset position. This unit is 26 feet in length.

The mid-section, 29 feet overall, carries the hoisting sheaves and the fourble board. The platform is permanently attached, even when making a move from one location to another. When dismantled the platform folds against the frame, and swings into rigid position when the derrick is lifted. The two bottom sections are complete with folding gin pole for hoisting into position. In addition, there is a small connecting truss for connecting the two lower pieces together. The lower sections are 36 feet in length. Each of the unit pieces is complete with ladder.

The base is 12 feet 8 inches by 30 feet in length, so constructed to suit any type of rotary draw works and table. Although rigid when assembled on location, the base is hinged lengthwise at the center through four bearings set flush with the floor. In the front end of the base is a removable section which permits skidding the derrick backward from a well head without elevating the base.

Four shoes support the derrick on its base. The front two actually carry the load, for the rear two, at a distance of 16 feet from the front supports, serve more as a compression guy line through the rear legs. This is apparent by drawing an imaginary center line through the crown block at right angles to the floor. The line strikes far in front of the middle point between the two sets of legs. The major function of the rear legs is to assure rigidity. They fold against the lower section, rather than being independent of it in assembly.

By employing this principle of lift in the applied manner, the use of guy lines is eliminated. The jackknife is entirely self-supporting. Construction satisfies load requirements, having a capacity of 300,000 pounds rating.

Raising Into Position

Starting with the derrick assembled on location, the drilling line is taken over a sheave at the top of the gin pole, through a crown block sheave and through the traveling block. The line is strung up as for drilling but is dead-ended at a welded eye provided for the purpose on the base section of the derrick. The sling line connected to the top of the gin pole is then thrown over the drilling hook. The mast is then lifted to a vertical position by hoisting it with the draw works. The actual lifting is a matter of a minute.

The mast is then bolted to the top of the gin pole, the sling taken off the drilling hook, and the rig is ready for use.

To dismantle the derrick, the bolts connecting it to the gin pole are removed and the sling line thrown over the drilling hook. As the mast in normal position is past center relative to the two front legs, the catline is used to pull the mast past this point. As soon as it passes through the position of balance, the load goes onto the sling line and the derrick is lowered by breaking down the draw works.

Five men with truck and mounted gin pole have assembled the derrick on location in 1¼ hours. This was on ground already leveled. About 1½ hours were required to string the block. After the mast is raised, there are but four bolts to place and tighten. Under adverse conditions where the ground had to be smoothed over the derrick was up in less than a day's working time.

Hauling to Location

With the derrick sectionalized in the manner described, each individual unit is within highway limitations, both as to dimensions and weight. Two trucks were used to make a long move from one spot to another, no difficulty being experienced. The base and mid-section was loaded on one truck and the top and two bottom sections on the other. The net weight of the pieces, loaded in this manner, is as follows: base, 8660 pounds; mid-section, 4000 pounds; total, 12,660 pounds; top 5000 pounds, two bottom pieces, 7000 pounds; total 12,000 pounds. The center hinging arrangement of the base allows its folding into required size.

If desired, the traveling block need not be removed from the upper section. It can be pulled up against the crown block and fixed in place by winding cable about the cross-members.

Normal construction of the derrick affords a front opening of 67 feet. This allows doubling 30-foot joints; handling them as units after making up on the rack. Inside dimensions of the derrick are sufficient to allow the racking of 4800 feet of 4½-inch drill pipe without crowding.

The change over from rotary work to cable tools does not require shifting the position of the crown block in its seat. Instead, the vertical line between the well head and the center of the sheaves, necessary to rotary work, is moved to the outside of the sheave for cable tool work by shifting the rear legs of the derrick.

Two positions are afforded for these legs, cable positions being slightly to the rear of rotary positions. By shifting the legs back, the derrick top is also swung back so that the circumference of the sheave, rather than the center, is directly over the hole.

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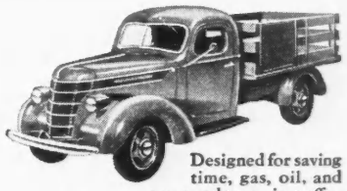

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Ideas Used to Solve Field Employee Work Schedules

Varied programs available that meet provisions of Wages and Hours Act

By BRAD MILLS
Associate Editor

PROVISIONS of the Fair Labor Standards Act of 1938 are being complied with by Gulf Coast oil companies and drilling contractors through a variety of working schedules that give field employees from 36 to 56 hours of work weekly. Moreover, working shifts in most instances have been so rearranged to provide field men maximum benefits of "off" time, with location and living conditions being important factors given consideration. Overtime employment is strictly the exception with large producing companies, the weekly schedules calling for a maximum considerably below that allowed by the so-called "Wages and Hours" Act.

Use of two to four weeks as a basis of operations has enabled several companies to give employees a varying number of hours weekly without exceeding the maximum in any one week. A notable example of this is the "five and four" schedule used by several large oil companies. Under this schedule the field man works five 8-hour days one week and four 8-hour days the next week. Obviously the basis of this weekly schedule is 36 hours. The fact that a field man works more one week than another is of no consequence, so long as he does not exceed 44 hours at regular pay during any week.

A few oil companies and most of the drilling contractors favor working schedules that keep the drilling crews in close contact with well developments. These operators avoid long holidays between working weeks and usually work their crews six or seven days per week.

Drilling contractors frequently pay the overtime rates above 44 hours weekly, where 8-hour crews are worked six or seven days weekly. Such schedules are based on the belief that a driller working every day on a well is a more efficient workman than one working four or five days each week.

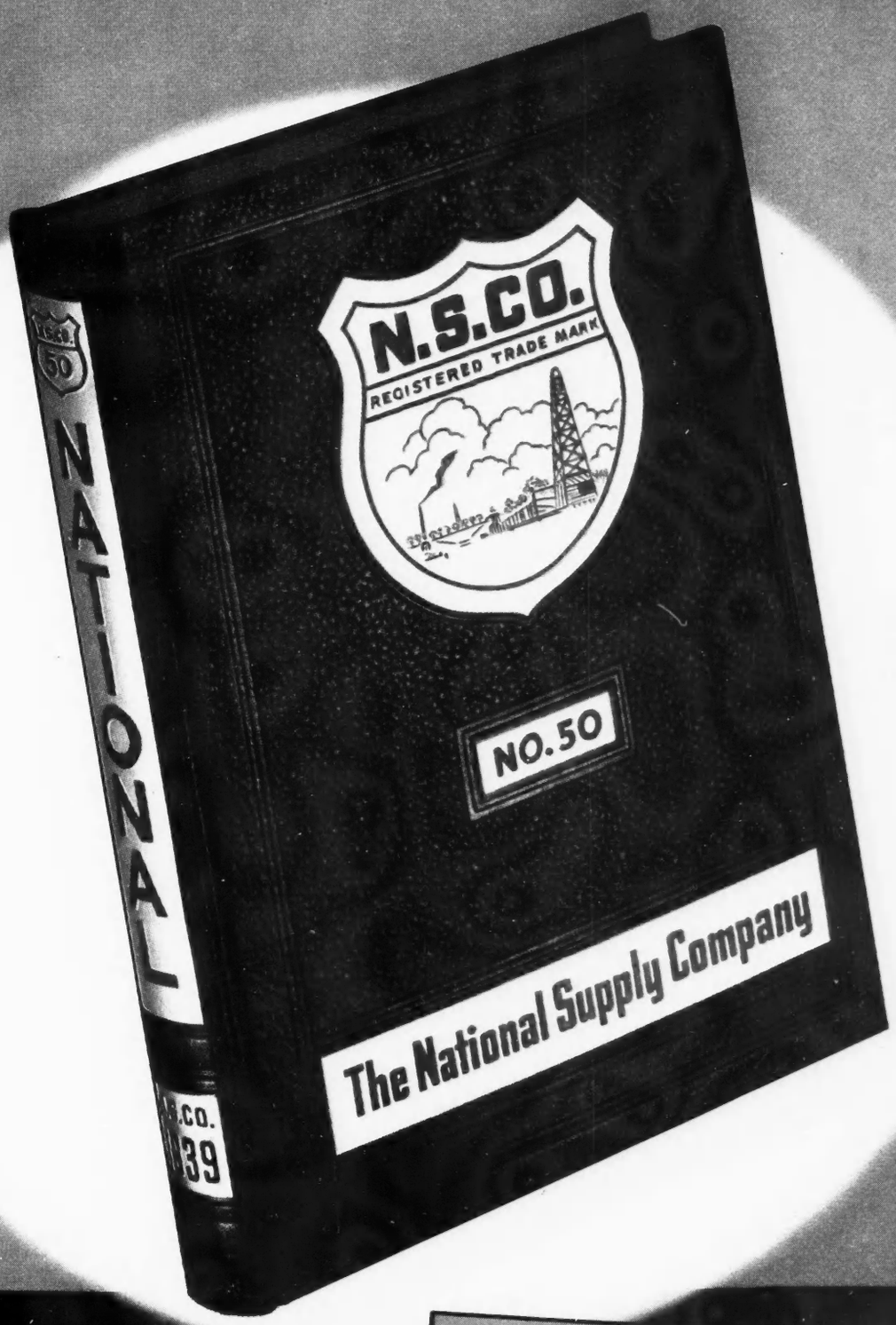
The 8-hour shift is largely preferred to the 6-hour shift among operators maintaining short working weeks. Theoretically the 6-hour days would be ideal for the 36-hour weekly schedule, but the majority of field men prefer the 8-hour shifts, with longer week-ends. Exceptions to this rule are found among workmen living on the leases and in such highly developed areas as the East Texas field. The 6-hour day is favored in a few settled fields that are located at considerable distance from large cities.

36-Hour Week Gaining

Companies giving drilling crews and field men 36 hours of work weekly are influenced by a desire to retain as many old employees as possible. The 44-hour week might necessitate laying off one man in five, where the work is being handled efficiently on a 36-hour basis. Several companies are able to give 40 and 42 hours weekly to old employees, but the 36-hour week is gaining in favor. Field men are, as a rule, willing to work an average of 36 hours weekly, rather than face the possibility of an outright layoff with longer schedules.

The average drilling contractor is particularly affected by the 44-hour maximum week. Since his men worked on an average of only 7½ months yearly on the old basis, any week-to-week reduction in working hours could work a hardship on men in the lower wage brackets. Prior to enactment of the Wage-Hour law, a drilling crew ordinarily worked 56 hours weekly at regular pay. Employment was not steady, however, and a crew with eight to nine months of work in a calendar year was better than an average drilling crew.

The 44-hour weekly maximum at regular pay has directly affected drilling contractors who ordinarily work their crews seven 8-hour days a week. Rather than change schedules, a few contractors maintain the 56-hour weekly basis by giving time and a half for the 12 extra hours. Continuation of this schedule is desirable because of the long layoffs experienced by the av-



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erage drilling crews, it is claimed.

Gulf Oil Corporation has developed an efficient working schedule for drilling crews. Under the schedule, a 30-day period is required to give all men the exact number of hours. The arrangement is called a non-rotating schedule, and the only alternating men are two relief crews. At the end of any 30 days each man in the drilling crew will have worked 18 8-hour days.

Under this 30-day working schedule, the regular crew for each 8-hour shift works three days and lays off two. This "three and two" arrangement for the three regular crews necessitates using five crews, all on an 8-hour daily basis. The 720 hours contained in 30 days gives each crew 144 hours for the period. During a period of one year, a crew member works about 1752 hours under this schedule, or slightly less than 34 hours weekly. The company has attempted to keep all of its regular field employees, and a slight reduction in the working schedules has been preferred by the men to longer schedules and occasional layoffs.

Gulf Oil Corporation also has used the "five and four" weekly plan for both drilling crews and miscellaneous field men, this arrangement having given 72 hours of work for each two weeks.

Fit Local Conditions

Humble Oil & Refining Company has given considerable attention to working schedules that fit local conditions. Hourly employees who are on straight days and do not perform shift work have a working schedule that consists of five 8-hour days one week and four 8-hour days the following week, averaging 72 hours in any two-week period. It obviously follows that these employees have three days off one week and two the next.

Hourly field employees who perform shift work, such as those in drilling crews, also work eight hours a day five days one week and four the next. The three shifts worked by these employees are the morning shift, from midnight to 8:00 a. m., the day shift, from 8:00 a. m. to 4:00 p. m., and the evening shift, from 4:00 p. m. to midnight.

Regular drilling crews do not change from one shift to another. As an example, one crew will work straight days, one straight evenings, and one straight mornings. The regular relief crew works any one of the three shifts, but is able to furnish all the necessary relief work for the regular crews. An additional relief crew is provided. This unit is called the floating crew, furnishes whatever additional relief that may be required, and often performs relief work on several different rigs.

In remote and isolated areas it is sometimes the practice to arrange the working schedules of drilling crews so that members of the crew will work the last five days of one week and the first four days of the following week. This schedule gives the men nine consecutive work days and five consecutive "off" days. The arrangement permits ample time for making whatever trips and visits that may be required under isolated working conditions.

Shell Oil Company prefers the 6-hour shift for all its regular drilling crews. This company's schedule calls for seven 6-hour shifts weekly in the active drilling areas, but under special conditions other schedules are used. The staggered,

Thirty-Day Working Schedule for Five Drilling Crews

(Each man works 18 eight-hour shifts, or 144 hours monthly)

FIRST TWO WEEKS:

WORKING HOURS	Mon., 21st	Tues., 22nd	Wed., 23rd	Thurs., 24th	Fri., 25th	Sat., 26th	Sun., 27th	Mon., 28th	Tues., 29th	Wed., 30th	Thurs., 1st	Fri., 2nd	Sat., 3rd	Sun., 4th
1st Shift (8 a.m.—4 p.m.)	Peper	Peper	Peper	Aycock	Aycock	Peper	Peper	Peper	Aycock	Aycock	Peper	Peper	Peper	Aycock
2nd Shift (4 p.m.—12 m.)	Aycock	Wmson	Wmson	Wmson	Demny	Aycock	Wmson	Wmson	Wmson	Demny	Aycock	Wmson	Wmson	Wmson
3rd Shift (12 m.—8 a.m.)	Demny	Demny	Haygood	Haygood	Haygood	Demny	Demny	Haygood	Haygood	Haygood	Demny	Demny	Haygood	Haygood

SECOND TWO WEEKS:

WORKING HOURS	Mon., 5th	Tues., 6th	Wed., 7th	Thurs., 8th	Fri., 9th	Sat., 10th	Sun., 11th	Mon., 12th	Tues., 13th	Wed., 14th	Thurs., 15th	Fri., 16th	Sat., 17th	Sun., 18th
1st Shift (8 a.m.—4 p.m.)	Aycock	Peper	Peper	Peper	Aycock	Aycock	Peper	Peper	Peper	Aycock	Aycock	Peper	Peper	Peper
2nd Shift (4 p.m.—12 m.)	Demny	Aycock	Wmson	Wmson	Wmson	Demny	Aycock	Wmson	Wmson	Wmson	Demny	Aycock	Wmson	Wmson
3rd Shift (12 m.—8 a.m.)	Haygood	Demny	Demny	Haygood	Haygood	Haygood	Demny	Demny	Haygood	Haygood	Haygood	Demny	Demny	Haygood

REMAINING DAYS:

WORKING HOURS	Mon., 19th	Tues., 20th
1st Shift (8 a.m.—4 p.m.)	Aycock	Aycock
2nd Shift (4 p.m.—12 m.)	Wmson	Demny
3rd Shift (12 m.—8 a.m.)	Haygood	Haygood

RECAPITULATION OF MAN WORK HOURS:

Peper	18 days
Aycock	18 days
Wmson	18 days
Demny	18 days
Haygood	18 days

Note—The above is sample of non-rotating schedule; only alternating men are two relief crews

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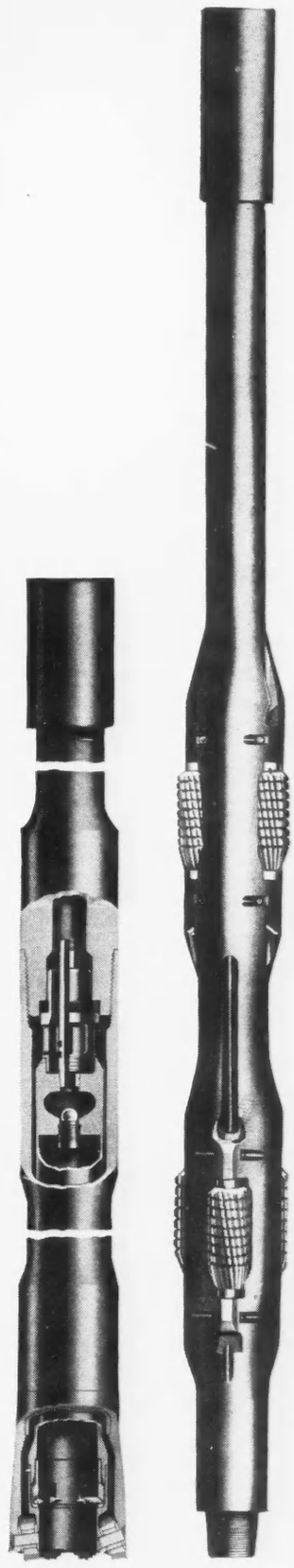

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Schedule of Hourly Wages Paid by Five Gulf Coast Companies and Drilling Contractors

	A	B	C	D	E
Driller	$1.40	$1.33	$1.55	$1.60	$1.47
Derrick Man	.92	.89	1.04	1.06	.98
Fireman	.92	.83	.99	.102	.94
Roughneck	.86	.83	.96	.98	.91

or "five and four," schedule has been used on occasion, giving the men 72 hours every two weeks.

The field men in general work on a 36-hour basis, with six 6-hour shifts being commonly used in the more accessible areas. In the remote districts the 8-hour shift is sometimes used, the schedule calling for five days one week and four the next. In the East Texas field and in other highly developed areas the field men prefer the 6-day, 6-hour weekly schedule.

The Texas Company uses the 36-hour week as a working basis for production field men, but the 8-hour shift is commonly employed by drilling crews. No firm rule has been established for shifts, and various superintendents meet requirements with different schedules. Differences in hours caused by the 8-hour shifts are balanced out from week to week.

In South Texas this company uses a 6-day, 6-hour weekly schedule to meet local conditions. Stripper pumpers and a few resident employees work 40 hours per week in the various producing districts. These men ordinarily work five 8-hour days weekly.

Drilling contractors meet provisions of the Wage-Hour Act, but often through the medium of overtime rates. Work of the drilling contractor is irregular, but when active he must rush the job to completion. Some of the contractors who have acquired leases are able to maintain a more regular schedule by working their men on their own wells.

George H. Echols, who is both a drilling contractor and oil producer, maintains a 42-hour weekly working schedule for his drilling crews. All work is done on an 8-hour shift basis, and if the men work more than 42 hours one week they are cut back the next to make 84 hours every two weeks. It is difficult to give 42 hours of work weekly on an 8-hour shift basis. Echols has been doing work on his own account and has been able to shift men to advantage.

Harry L. Edwards Drilling Company has developed a working schedule for drilling crews that involves both regular time and overtime rates each day. Under this schedule all men work seven 8-hour shifts weekly, with regular time being paid for six hours daily and time and a half being paid for two hours daily. The arrangement gives the men 56 hours of work weekly, of which 42 hours are at regular pay and 14 hours at time and a half. A two-week period is used as a basis for computation, but the work is carried on with three 8-hour shifts daily and with three regular crews.

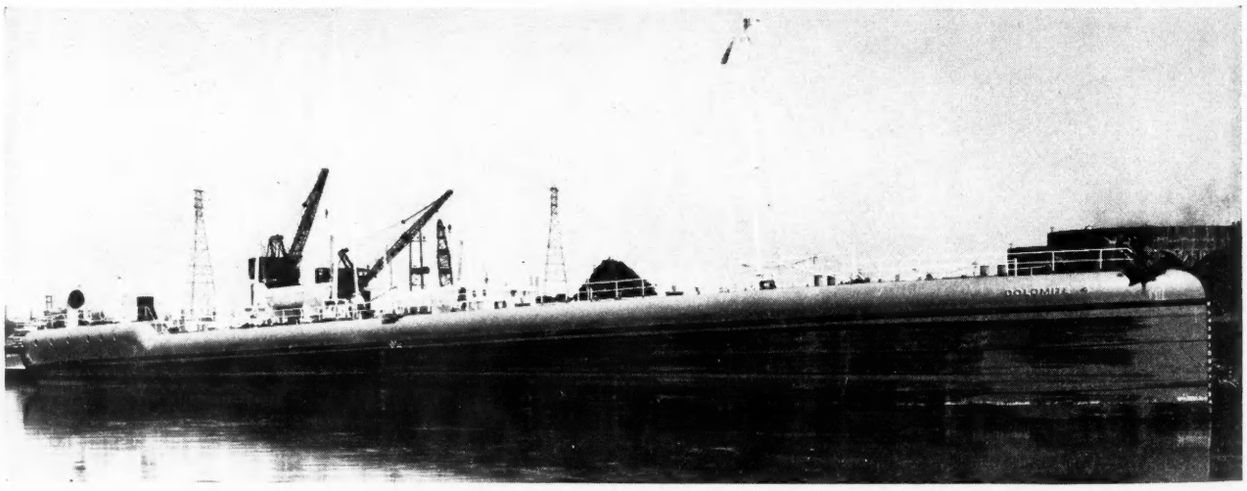
Use of this schedule seems to give a high number of hours weekly to drilling crews, but when it is considered that the men do not work regularly during a yearly period, the occasional series of 56-hour weeks do not give more than an average of 40 hours weekly.

The drilling contractor employing men an average of eight months yearly usually provides the work in three to a dozen periods or installments. Temporary employment on a seven-day weekly basis does not denote the deliberate use of a 56-hour week.

Nicklos Drilling Company works on an 8-hour shift basis, but has no definite weekly schedule. Overtime provisions are observed.

Weekly working schedules for drilling crews are more difficult to make and observe than are those for ordinary field men. Much of the miscellaneous field work is carried out on a straight 8-hour daylight basis, while drilling hours are continuous.

Oil companies and drilling contractors pay exceptionally high wages, the average for each group being above the average for manual labor in any other major industry.



Outlook Brighter

(Continued from Page 13)

by making Mid-Continent production balance with the market demand available to the Mid-Continent. And in like manner, even though the Mid-Continent states cannot influence Illinois production in coming months, they can largely shape their own affairs and markets, particularly as long as Illinois does not exceed its present importance.

Gasoline Surplus Threatened

For two years gasoline stocks have been considerably larger than economically desirable, and special care will be needed in coming months to prevent them from becoming unwieldy and a serious drag on the market, despite some improvement of the inventory situation under the 15-day shutdowns.

It is to be expected that relatively active refinery operations will follow the reopening of the oil fields, in a concerted effort to augment comparatively short inventories of the lighter fuel oils used for heating. The season of consumption of the heating oils is fast approaching, and inventories are relatively low, being only about 4 percent greater than at this time last year, while demand is running about 20 percent higher. Consequently, relatively large production of light fuel oil for meeting the demand may be anticipated, and there is serious danger that in providing the large quantities of fuel oils, the industry will turn out excessive volumes of gasoline.

Oil Demand Good

Continued good demand for petroleum products is anticipated by the Bureau of Mines, which has estimated that total market requirements of gasoline will be 7.1 percent greater in September, 1939, than in September, 1938. The bureau offered the forecast that domestic use of gasoline would be up 6.6 percent from last September and that exports would be 13.4 percent larger. These estimates are in line with recent trends.

In the first half of this year, total demand for United States oils was 6.4 percent larger than in the corresponding period last year, an increase in domestic consumption having more than offset a small decrease in total shipments abroad.

Domestic Use Up

Total domestic demand in the first six months of 1939 was 8.3 percent larger than in the corresponding months of 1938. Toward that increase nearly all products contributed. Gasoline use in the United States was up 5.5 percent, and other increases were those of 12.4 percent for kerosene, 20 percent for gas oil and distillate fuels, used primarily for heating, 10.4 percent for residual fuel oils, used as fuel by industry, 11.6 percent for lubricants, 30.1 percent for coke, 6.2 percent for asphalt, 9 percent for road oil, 5.8 percent for still gas, and 27.6 percent for miscellaneous products. Wax was the only product used less extensively this year than last year, having shown a 15.4 percent decrease.

Supply and Demand Larger and Stocks Reduced in First Half of 1939

Figures are in barrels; furnished by Bureau of Mines

ITEM	APRIL COMPARISON			MAY COMPARISON			JUNE COMPARISON			HALF-YEAR COMPARISON		
	April, 1938	April, 1939	Percent Change	May, 1938	May, 1939	Percent Change	June, 1938	June, 1939	Percent Change	First 6 Mos., 1938	First 6 Mos., 1939	Percent Change
NEW SUPPLY:												
Domestic Production:												
Crude Petroleum	102,702,000	105,510,000	+ 2.7	98,674,000	110,541,000	+12.0	94,277,000	104,607,000	+ 10.9	602,846,000	623,391,000	+ 3.4
Daily Average	3,423,000	3,517,000	+ 2.7	3,183,000	3,566,000	+12.0	3,143,000	3,487,000	+ 10.9	3,331,000	3,444,000	+ 3.4
Natural Gasoline	4,171,000	4,232,000	+ 1.5	4,196,000	4,280,000	+ 2.0	4,001,000	4,095,000	+ 2.3	24,919,000	24,850,000	— 0.3
Benzol	128,000	162,000	+26.6	117,000	130,000	+11.1	105,000	174,000	+ 65.7	772,000	1,013,000	+31.2
Total Production	107,001,000	109,904,000	+ 2.7	102,987,000	114,951,000	+11.6	98,383,000	108,876,000	+ 10.6	628,537,000	649,254,000	+ 3.3
Daily Average	3,567,000	3,663,000	+ 2.9	3,322,000	3,708,000	+11.6	3,279,000	3,629,000	+ 10.6	3,473,000	3,587,000	+ 3.3
Imports:												
Crude Petroleum:												
Receipts in Bond	333,000	284,000	—17.1	277,000	494,000	+78.3	269,000	468,000	+ 73.9	1,492,000	2,299,000	+54.1
Receipts for Domestic Use	1,494,000	2,648,000	+77.2	1,804,000	3,434,000	+90.3	1,923,000	3,196,000	+ 66.2	11,155,000	13,321,000	+19.4
Refined Products:												
Receipts in Bond	1,907,000	1,475,000	—22.6	1,539,000	2,130,000	+38.4	1,866,000	1,859,000	— 3.7	9,612,000	9,249,000	— 3.7
Receipts for Domestic Use	454,000	366,000	—19.4	401,000	529,000	+31.9	693,000	750,000	+ 8.2	3,374,000	3,567,000	+ 5.7
Total New Supply, All Oils	111,189,000	114,677,000	+ 3.3	107,008,000	121,538,000	+13.6	103,134,000	115,149,000	+ 11.6	654,170,000	677,690,000	+ 3.6
Daily Average	3,706,000	3,823,000	+ 3.1	3,452,000	3,921,000	+13.6	3,438,000	3,838,000	+ 11.6	3,614,000	3,744,000	+ 4.4
Increase in Stocks, All Oils	3,891,000	4,617,000	+18.7	1,651,000	245,000	—85.2	6,962,000	2,425,000	— 65.2	19,521,000	2,089,000	—89.3
DEMAND:												
Total Demand	107,298,000	110,060,000	+ 2.6	108,659,000	121,293,000	+11.6	110,096,000	117,574,000	+ 6.8	634,649,000	675,601,000	+ 6.4
Daily Average	3,577,000	3,669,000	+ 2.6	3,505,000	3,913,000	+11.6	3,670,000	3,919,000	+ 6.8	3,506,000	3,733,000	+ 6.4
Exports:												
Crude Petroleum	7,553,000	6,222,000	—13.3	7,798,000	8,643,000	+10.8	7,424,000	5,831,000	— 21.4	40,177,000	34,949,000	—13.0
Refined Products	10,427,000	9,222,000	—11.6	10,681,000	12,128,000	+13.5	10,338,000	10,798,000	+ 4.4	57,243,000	58,847,000	+ 2.8
Domestic Demand:												
Motor Fuel	43,254,000	43,977,000	+ 1.7	44,911,000	49,547,000	+10.3	48,293,000	49,812,000	+ 3.1	244,754,000	258,218,000	+ 5.5
Kerosene	4,333,000	5,042,000	+16.3	3,637,000	4,368,000	+20.1	3,257,000	3,570,000	+ 9.6	26,754,000	30,062,000	+12.4
Gas Oil and Distillate Fuels	7,800,000	10,047,000	+28.9	7,144,000	7,357,000	+ 3.0	5,591,000	7,198,000	+ 28.7	55,315,000	66,345,000	+20.0
Residual Fuel Oils	22,279,000	24,806,000	+11.8	22,353,000	25,646,000	+14.7	22,177,000	24,783,000	+ 11.8	141,976,000	156,804,000	+10.4
Lubricants	1,591,000	1,791,000	+12.6	1,730,000	2,132,000	+23.2	1,606,000	1,902,000	+ 18.4	9,904,000	11,053,000	+11.6
Wax	101,000	52,000	—48.4	92,000	102,000	+11.1	85,000	70,000	— 17.6	565,000	468,000	—15.4
Coke	313,000	394,000	+25.9	422,000	587,000	+39.1	573,000	578,000	+ 0.8	2,567,000	3,340,000	+30.1
Asphalt	1,654,000	1,840,000	+11.2	2,203,000	2,714,000	+23.2	2,675,000	2,834,000	+ 5.9	9,936,000	10,551,000	+ 6.2
Road Oil	208,000	267,000	+28.3	593,000	695,000	+17.2	1,274,000	1,210,000	— 5.3	2,525,000	2,753,000	+ 9.0
Still Gas	5,073,000	5,386,000	+ 6.1	5,542,000	5,798,000	+ 4.6	5,387,000	5,768,000	+ 7.1	30,268,000	32,038,000	+ 5.8
Miscellaneous	166,000	181,000	+ 9.1	143,000	214,000	+49.6	157,000	205,000	+ 30.6	872,000	1,113,000	+27.6
Losses	2,546,000	833,000	—67.3	1,410,000	1,362,000	— 3.4	1,259,000	3,015,000	+139.5	11,793,000	9,060,000	—23.1
Total Domestic Demand	89,318,000	94,616,000	+ 6.0	90,180,000	100,522,000	+11.5	92,334,000	100,945,000	+ 9.3	537,229,000	581,805,000	+ 8.3
Daily Average	2,977,000	3,154,000	+ 6.0	2,909,000	3,243,000	+11.5	3,078,000	3,365,000	+ 9.3	2,968,000	3,214,000	+ 8.3
STOCKS:												
Crude Petroleum:												
Refinable in U. S.	307,297,000	278,565,000	— 9.3	298,983,000	278,087,000	— 7.0	292,634,000	273,314,000	— 6.6	292,634,000	273,314,000	— 6.6
Heavy in California	16,887,000	15,198,000	—10.0	17,353,000	14,492,000	—16.5	17,425,000	14,207,000	— 18.5	17,425,000	14,207,000	—18.6
Natural Gasoline	6,179,000	5,484,000	—11.2	6,548,000	6,212,000	— 5.1	6,951,000	6,749,000	— 2.9	6,951,000	6,749,000	— 2.9
Refined Products	261,757,000	259,492,000	— 0.8	267,585,000	260,193,000	— 2.7	266,497,000	262,289,000	— 1.6	266,497,000	262,289,000	— 1.6
Total, All Oils	592,120,000	558,739,000	— 5.6	590,469,000	558,984,000	— 5.3	583,507,000	556,559,000	— 4.6	583,507,000	556,559,000	— 4.6
Day's Supply	166	152	— 8.4	168	143	—14.9	159	142	— 10.6	166	149	—10.2

WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

War and Petroleum

Totalitarian states would be shy of crude and refined products in event of prolonged battle.

IN view of the generally accepted correctness of the saying that he who has oil wins the war, it is possible that the totalitarian states of Europe might find themselves in a serious predicament in the event of a prolonged battle against the democracies.

Of the five nations likely to become involved immediately in war, the only one which produces within its boundaries anywhere near enough crude oil to war time requirements is Poland. Germany, France, England and Italy are essentially dependent upon imports, the last three almost wholly so.

Accumulated Stocks

Germany and Italy have been accumulating stocks of crude and refined petroleum for some time, but the amount of oil immediately available for military uses by either of those nations is not known accurately. How long this stored supply can fuel and lubricate existing mechanized units of air, sea and land likewise is an unknown factor. Any imports subsequent to exhaustion of existing storage would be subject enroute to the jeopardies of war. And for that matter, the same would hold true for England and France.

Russian Aid Discounted

Notwithstanding the pending trade treaty between Russia and Germany, it is felt in some circles that this agreement would not constitute a great deal of military assistance for Germany. Due to the abnormally rapid and far reaching scope of industrial mechanization in the Soviet Union in the past few years, the upward angle of the consumption trend curve there has been far steeper than that of the curve showing increased production, with the result that exports of petroleum from the Black Sea consistently have declined during the same period. Russia, if she were to put an army in the field on either side, would have to curtail internal industry seriously to afford any material aid to the Nazi army and navy. As a matter of record, in a list of principal suppliers of petroleum products to Germany during 1938, the U. S. S. R. gained only two individual listings, one for having furnished 8 percent of Germany's imports of lubricating and transformer oils, the other for having supplied 6 percent of her paraffin imports.

Rumania Unpredictable

Rumania, located in the middle of the hotbed, is unpredictable. Her crude reserves and manufacturing facilities would be sought by both sides. Some hold the opinion Rumania is still mindful of damage done to her wells in the last war by Germany and that she would be prone to sympathize with Poland, England and France. Another angle is that she fears the territorial ambitions of Hitler might have programmed the Bucharest government as the next Nazi objective. Rumania, on the other hand, caused England and France no small amount of chagrin by negotiating, like Russia, a 5-year trade treaty with Germany. It was signed March 23. Her annual production of 48,984,200 barrels last year renders her highly desirable as an ally and equally attractive as the objective of a military offensive. Hence, that agreement, reputedly calling for assignment to Germany of 40 percent of Rumania's exports of petroleum products, may have spurred Hitler's conquest and aroused the confidence of his military advisors. If the 40 percent clause could be verified, it would mean that Germany would depend on other nations for only about one third of its peace-time motor fuel requirements.

Rumanian Treaty

Importance of the Rumanian-German treaty in alleviating the latter's critical fuel supply condition in case of war is partially offset by the fact that Rumania ranked as one of Germany's principal sources of petroleum imports prior to March 23, indicating that the 40 percent option on Rumania's exports might not make such a large difference in Germany's available fuels and lubricants as would seem to be indicated at first glance. For instance, of Germany's total imports of crude and refined petroleum products in 1938, Rumania furnished, according to the United States Bureau of Mines, the following percentages: crude oil, none; gasoline, 23; kerosene, 38; gas and motor oil, 4; lubricating and transformer oil, 2; fuel oil, 4; tarry paraffinic residue, none; crude paraffin, none; ozokerite crude (unmelted), 9; asphalt, 13; solid, natural asphalt, none. The foregoing percentages are given only to full figures, no fractional additions having been calculated. It should be called to the reader's attention, also, that Rumania undoubtedly supplied Germany in 1938

Although operators in Turner Valley like to avoid this sort of weather in preparing foundations for derricks, if England enters the European war it is likely that the above Albertan scene in Canada will become a common thing in the winter months to come.

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with petroleum products not listed in the above percentages, but was not important enough as a supplier of those miscellaneous products to earn an individual rating in the Bureau of Mines tabulation.

Along this line of thought it is interesting to observe that the United States was far more important as a supplier of crude and refined petroleum to Germany in 1938 than either Rumania or Russia. The following percentages of total crude and oil products bought by Germany in that year came from the United States: crude oil, 27; gasoline, 19; kerosene, none; gas and motor oil, 36; lubricating and transformer oil, 43; fuel oil, none; tarry paraffinic residue, none; crude paraffin, 27; crude unmelted ozokerite, 72; petroleum asphalt, none; solid natural asphalt, 51; mastic asphalt, 100.

Mexico Important

Another prominent trans-Atlantic source of supply for Germany is Mexico. Expected to exceed 1938 exports to Germany when the figures for 1939 are available, Mexico last year sent Germany the following percentages of the latter's total oil imports: crude oil, 25; gas oil and motor oil, 9; fuel oil, 13; tarry paraffinic residue, less than 1 percent, and petroleum asphalt, 7. Mexico did not earn individual rating in listings of other petroleum products Germany may have purchased, so it is reasonable to assume they were negligible in quantity.

Much of the oil and petroleum products shipped to Germany from Mexico has been on a barter basis, Germany furnishing machinery for the oil. It is questionable whether such an arrangement would continue in the event of a large war, as Mexico now needs, more than ever, cash to carry out the revolutionary program as outlined by the incumbent regime. The same holds true for Italy, Mexico's second best customer for petroleum exports. It is swapping raw materials, plus three tankers (now under construction) for Mexican oil. If war were to break out tomorrow, or next week, it might be observed parenthetically that delivery time of the Italian tankers for Mexico might be postponed indefinitely. Mexico, by the way, produced annually 46,000,000 barrels prior to March 18, 1938, the day on which properties of foreign controlled oil companies there were expropriated. Since then the government controlled and operated industry has not attained the production level maintained by private enterprise. Italy, the avowed ally of Germany in a possible war, as it was in the early stages of the World War, is heavily dependent upon imported petroleum, reliable sources crediting her domestic production of crude oil with being less than 1 percent of peace time requirements. It might be pointed out here that Italy is considered by far the poorest of the so-called "Great Powers" in regard to natural resources. Getting down to the oil business, Italy's crude production of 13,200 metric tons in 1938 was less than 1 percent of the tonnage imported during that year. Availability of Albania's production, recently included in acquisitions of Il Duce, still leaves the land of Mussolini woefully shy of crude and petroleum products. Italy imported about 60,000 metric tons from Albania in 1938.

With reference to importation of crude and refined petroleum products by Italy, here again the United States plays an important role. Of the total Italian importations during 1938 the following percentages came from the United States: crude oil, 59; gasoline, 30; residual fuel oil, 4; lubricating oil, 81; paraffin wax, 1.

For a basis of comparison, total imports of crude and refined products of Germany and Italy during 1938 follow:

German Petroleum Imports in 1938

Figures in Metric Tons

Crude oil	5,418,000
Gasoline	11,535,000
Kerosene	172,000
Gas oil and motor oil	10,640,000
Lubricating and transformer oil	2,716,000
Fuel oil	2,702,000
Tarry paraffinic residue	3,468,000
[1]Crude paraffin	20,980,000
Unmelted crude ozokerite	6,360,000
Petroleum asphalt	17,586,000
Solid natural asphalt	4,738,000
Mastic asphalt	68,000

Italian Petroleum Imports in 1938

Figures in Metric Tons

Crude oil	10,753,000
Gasoline	839,000
Kerosene	401,000
Residual fuel oil	6,361,000
Lubricating oil	307,000
[1]Paraffin wax	37,030,000
[1]Ceresin	184,000

[1] Figures in pounds.

While the table would make it appear that Germany and Italy are decidedly behind the eight ball so far as supplies for fueling and lubricating mechanized war units are concerned, it should be remembered that Germany, on the other hand, has a surplus of raw materials sorely needed by nations normally expected to oppose here in a world war. Czechoslovakia and Austria have contributed to her natural resources, though not to as great an extent as might be supposed from reading press dispatches dealing with recent territorial acquisitions of Nazi Germany.

Space does not permit discussion of the petroleum resources of England, France and Poland in this issue, but they will be outlined in a subsequent issue.

British American Engineering Congress cancelled

Unsettled conditions in Europe made it necessary for 300 British engineers, members of the Institution of Civil Engineers and the Institution of Mechanical Engineers, many of whom are key men in Great Britain's industrial mobilization scheme, to cancel their plans to sail on the Cunard-White Star liner, R.M.S. Samaria (scheduled to leave England August 26) for the United States where the two institutions were to participate with the American Society of Civil Engineers, the American Society of Mechanical Engineers, and the Engineering Institute of Canada in a "British American Engineering Congress," to be held in New York, September 4-8.

All functions arranged for the congress and the fall meeting of the A.S.C.E. and the fall meeting of the A.S.M.E., which were being held in conjunction with the congress, have been cancelled.

Resources committee sees "public ownership inevitable"

Recommendations of the National Resources Committee for federal control of waste in the production of oil and natural gas were repeated this week by the board's successor, the National Resources Planning Board.

Making public additional material compiled by the original board before it was reorganized under President Roosevelt's reorganization program, the planning board on August 28 declared that the need for a national energy resources policy in the interest of defense, conservation and economic betterment is emphasized by the technical material which has been secured.

The planning group pointed out that in its report to Congress, the National Resources Committee recommended that "a federal oil conservation board or commission should be created within the appropriate government department to administer the federal interest in the oil and gas industry and to make necessary rules and regulations concerning the production of and commerce in oil and gas. It should have the authority to require that oil and gas be extracted by such methods as are adequate to avoid waste and to protect the interest of all producers drawing from a common reservoir."

The recommendations of the committee would be carried out in the Cole petroleum conservation bill introduced just before adjournment of Congress, on which an investigation of the industry will be made this fall by a House Interstate Commerce subcommittee headed by Representative William P. Cole, Jr., of Maryland.

Issuance of the statement by the National Resources Planning Board at this time was seen as motivated by a desire to focus attention upon the need for a national policy with respect to energy resources from the angle of national defense, in view of the European situation.

Warning that the development of such a program is a matter requiring a considerable period, the board, again quoting the original body's findings, pointed out that:

"It is difficult in the long run to envisage a national coal policy or a national petroleum policy or a national water-power policy without also in time a national policy directed toward all these energy producers—that is, a national energy resources policy. Such a broader and integrated policy toward the problems of coal, petroleum, natural gas and water power cannot be evolved overnight, for each of those problems is amazingly complex and in combination they represent more than a simple sum of problems.

"Despite the complexity of those problems, in the national interest we shall have to move in the direction of solutions. It is well to remember that the present and proposed regulatory measures which we have discussed are designed to promote the development of the energy resources industries along lines that will be consistent with the broad national interest. The problems of conservation which dictate these measures are not the result of passing emergencies.

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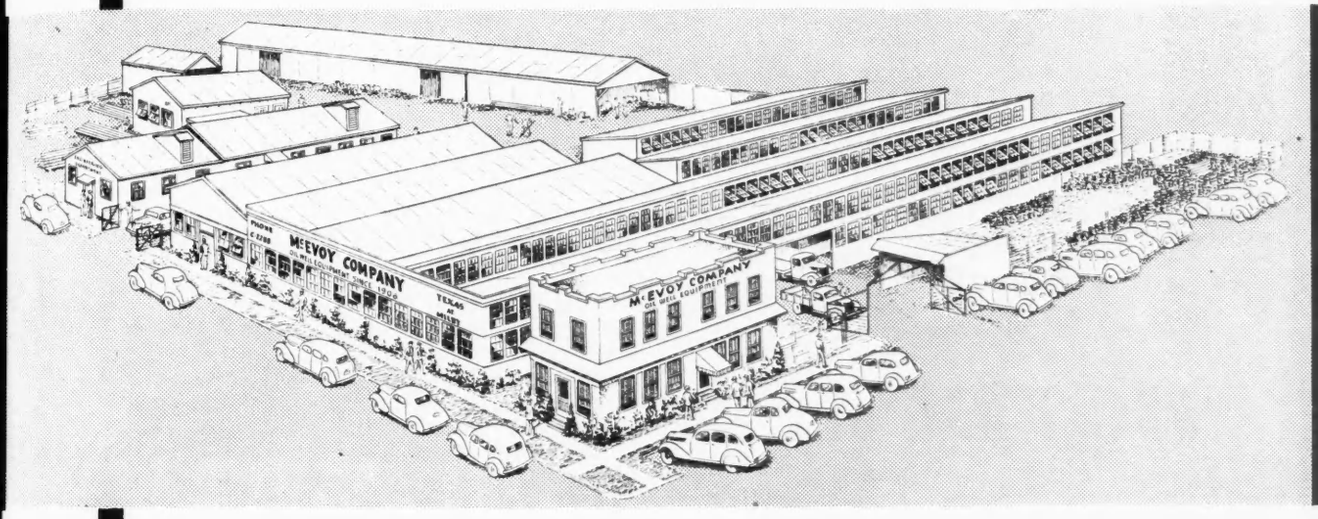

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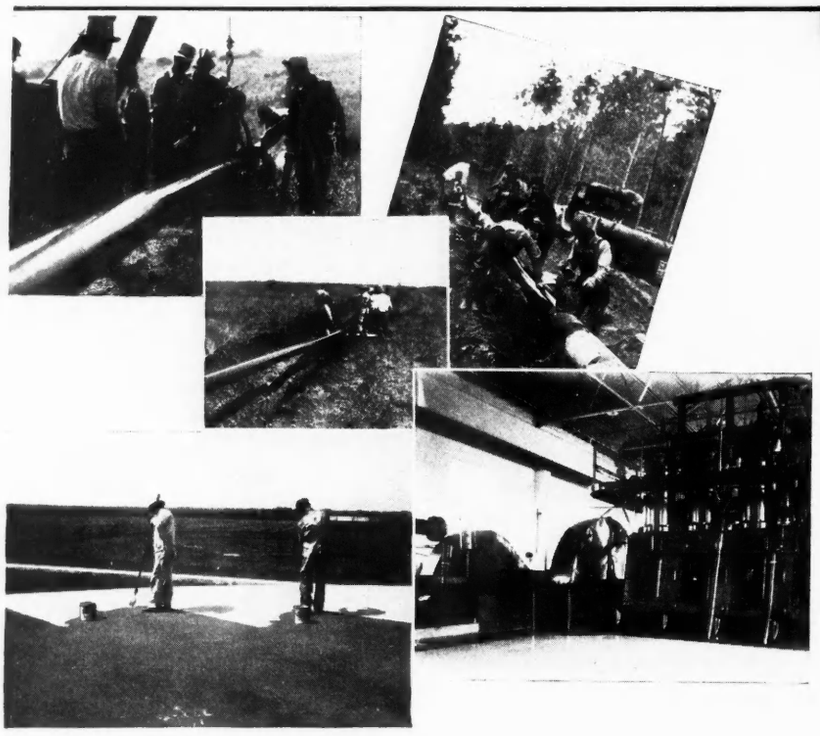

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MEN IN THE INDUSTRY'S NEWS

ALEXANDER B. MORRIS, formerly consulting engineer of Tulsa and for the past eight years attached to natural resource section of income tax unit, was in Tulsa last week enroute to San Antonio where he will take up duties of engineer revenue agent working under the Dallas office.

ROBERT B. CAMPBELL, geologist, president of the Peninsular Oil and Refining Company of Florida, is attending the Fifth International Congress for the Unity of Science, held at Harvard University, Cambridge, Massachusetts, September 3 to 9.

D. H. VOSS, district office manager of Maracaibo Oil Exploration Corporation, has returned to Dallas headquarters after vacationing in California.

LOUIS C. MARLANE, graduate geologist of New York City, has been temporarily assigned to the Magnolia Petroleum Company's West Texas geological staff at Midland to undergo a period of training before reporting for foreign service with the Socony-Vacuum Oil Company, Inc.

HARRY ADAMS, Midland producer, was elected president of the Permian Basin Oil, Land and Business Men's Association formed at Colorado City, Texas, August 24 and 25 in connection with the celebration of the nineteenth anniversary of the discovery of commercial oil production in the West Texas Permian Basin. Four vice presidents are: M. D. Bryant, San Angelo; Charles C. Thompson, Colorado City; Ralph Oberholtzer, Seagraves; and George Elliott, Odessa. Guest speakers included: J. C. Hunter of Abilene, Texas, president of the Mid-Continent Oil & Gas Association; Wm. R. Boyd of New York, executive vice president of the American Petroleum Institute; and Congressmen Tom Connally and George H. Mahon.

FRED M. LEGE, JR., 58, vice president and a director of Magnolia Petroleum Company, died August 30 in a Dallas hospital after a prolonged illness. He was a native of Texas, and began work as a telegraph messenger boy at Del Rio and later at Eagle Pass. He was given a job with a Mexican railroad at Piedras Negras while still a youth, and within 5 years became chief car accountant after improving his education by taking correspondence courses. In 1900 he was made manager of an electric power company at Eagle Pass, and in 1907 moved to Galveston for a similar position. His first connection with the petroleum industry was made in 1914 when he moved to Corsicana to become president of North Texas Gas Company. Three years later he was elected vice president and general manager of a Dallas electric power company, leaving that position to become an official of Lone Star Gas Company. Severing this connection he operated independently, establishing large tank farms and purchasing oil production in the Corsicana-Powell and Smackover fields. In 1924 he organized Magnolia Gas Company, a subsidiary of Magnolia Petroleum Company, and remained head of the company until the sale of the gas properties in March, 1930, to Electric Bond & Share Company for $47,250,000. Immediately following this transaction, Lege became an executive officer of Magnolia Petroleum Company.

GEORGE S. BOLE, 59, Tulsa oil operator and civic leader, died August 28 after a long illness. He was a native of McKean County, Pennsylvania, and spent the early part of his life at Bellevue, Pennsylvania, where his father was active in the oil business. He was connected with South Penn Oil Company, Pittsburgh, Pennsylvania, and later moved to Tulsa to operate independently.

JULIUS RICKERT, Count de Braban, 81, discoverer of the Rickert field in the Bow River Forest Reserve west of Turner Valley, Alberta, Canada, died August 18 in Vancouver, British Columbia. Also noted as a mining engineer, Rickert came to Calgary in 1900. In 1931 he went to Kelowna where he served as geologist for Kelowna Oil & Gas Company.

A. W. CHERRY, Illinois operator with headquarters at Evansville, returned to Midland, Texas, the past week to check his West Texas oil interests. He was active in the latter district before joining the migration to the Illinois Basin.

ROBERT S. KING, former president of Pennzoil Company, Oil City, Pennsylvania, last week was named vice president and director of The Philip Carey Manufacturing Company, Cincinnati. After entering the oil industry in Oklahoma in 1909 as producer, King formed State Oil Company at Lincoln, Nebraska, in 1911. Four years later he established Refiners Oil Company at Dayton, Ohio, which was subsequently sold to Standard Oil Company of Ohio.

GEORGE SCHNEIDER, chief geologist for The Texas Company, at Shreveport, accompanied by his family, is spending a vacation in Denver, Colorado.

GORDON L. GANO, head of the oil pipe line department of Arkansas Fuel Oil Company at Shreveport, accompanied by his family, is spending a vacation on the Mississippi Coast.

E. B. HUTSON, paleontologists for Standard Oil Company of Louisiana, Shreveport, is on a vacation trip to Mexico City.

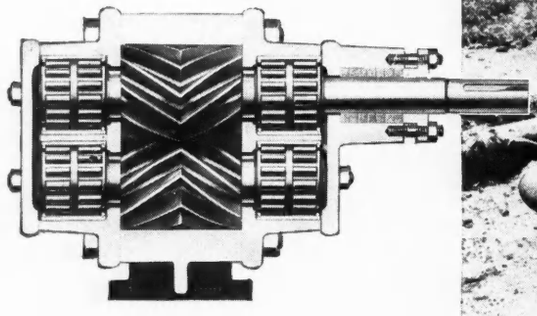
GEORGE P. HILL of Hill & Hill, Inc. has returned to his Fort Worth headquarters after spending the past several months, accompanied by his family, vacationing in South America.

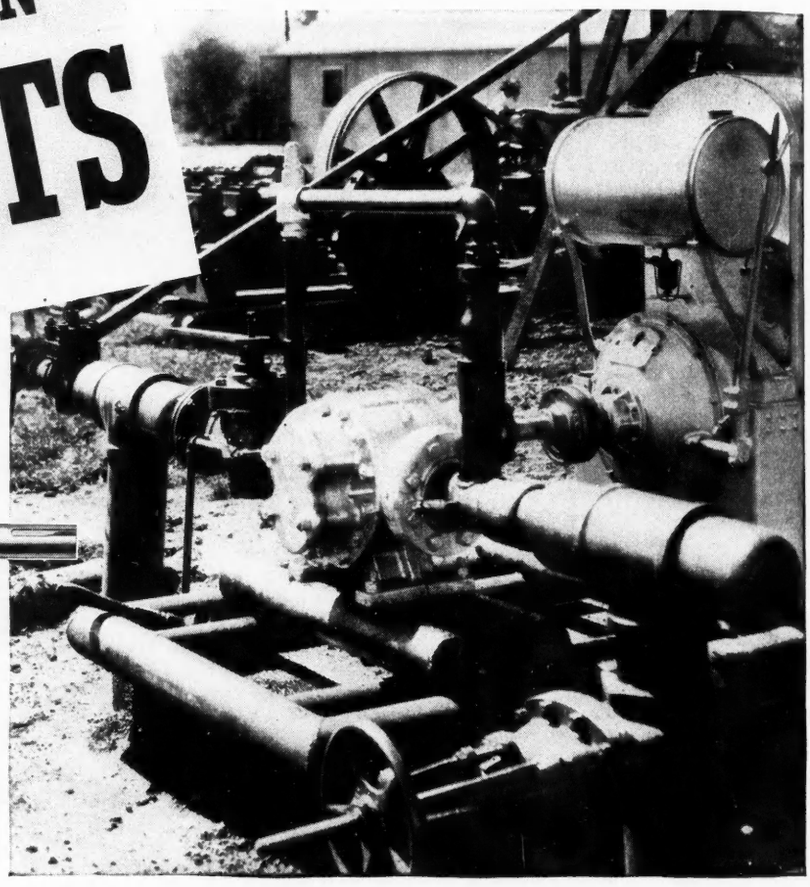
Louisiana's New Commissioners

Following the latest upheaval in Louisiana oil circles, Ernest Clements, left, and Dave B. McConnell, were appointed to the state's oil conservation commission.

SMOOTH GOING...ON HYATTS

Pumps built by the WORTHINGTON PUMP AND MACHINERY CORPORATION are widely used throughout the petroleum industry. As the cutaway illustration (below left) indicates, Hyatts carry the load.





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HYATT *Roller Bearings*

THE WEEK'S NEWS SUMMARIZED

Situation

The oil industry returned to normal operations last week, as six Mid-Continent producing states commenced producing their usual daily quotas of petroleum following the restoration of crude oil prices to their former, higher levels. This action followed the unprecedented 15-day production shutdowns instituted as a retribution movement against drastic crude price cuts that took place earlier in the month.

The breaking point in the heretofore apparently deadlocked situation came at Austin last Monday, when the Texas Railroad Commission and the Interstate Oil Compact Commission listened to executives of 25 companies. Surprisingly, testimony at the hearing indicated that there was not an exceedingly large surplus of either crude oil or gasoline stocks existing, and that most concerns would be pinched for supplies if the shutdowns were continued.

Monday evening it was announced that in Texas the shutdowns would be extended two days until September 1, and other states at once planned to follow this course. However, the following morning brought the restoration of crude prices to their former schedules by several major purchasers, and immediately it was decided to rescind plans to extend the production holidays.

Allowables

As the industry emerged from the shutdown period, there were indications that the principal producing states would adopt allowables for September well in line with the Bureau of Mines' estimate of demand. All the "striking" states that have announced their September figures, with the exception of Arkansas, have cut considerably below the estimate. Texas has elected to continue its August allowables until September 11, when an important hearing in Austin is scheduled to determine the state's future proration course.

The situation in Texas is extremely perplexing. Faced with the necessity of meeting several court injunctions that followed a federal court ruling that East Texas proration methods were confiscatory, the commission is forced to grant that field an increase in allowable. In announcing the September 11 hearing, the commission made known its intention to bring the state's production down to 15 percent below the bureau's quota for the state. Apparently, this indicates the commission intends to propose to the hearing that East Texas be granted a 110,000-barrel increase to 488,000 barrels daily, and that other fields in the state will be reduced approximately 260,000 barrels. This hearing, therefore, is expected to be one of the most hectic as well as important ones in proration history.

Anti-Trust

The oil industry's Madison anti-trust suit was carried to the Supreme Court last week by both the prosecuting and defending attorneys. The government asked for a review of the Federal Circuit Court's decision reversing the conviction of 12 oil companies and five officers, while defendants asked a review of the same decision because of its failure to enter a dismissal rule.

A federal grand jury reconvened at Danville, Illinois, to hear additional testimony of the Department of Justice that monopolistic practices exist in the oil business.

The grand jury study on the Pacific Coast was practically stalemated for the time, as Standard Oil Company of California appealed from a federal judge's ruling requiring it to provide the jury with company records that were declared to be too voluminous.

Further hope that Illinois might soon have an oil conservation law developed last week as (1) President Roosevelt wrote to Governor Henry Horner regarding the matter; (2) the Petroleum Association of Illinois reversed its former position in declaring it now favored a conservation program, and as Pure Oil Company and Lt. Governor Steele did likewise.

Statistics

The six state 15-day production shutdowns are reflected in the latest statistics of the industry's stocks of both gasoline and crude oil. During the week ended August 26, gasoline stocks were drawn upon to the extent of 1,250,000 barrels. This dropped them to 73,475,000 barrels, but they were still 2.4 percent larger than a year ago.

Crude stocks were reduced about 5,000,000 barrels in the week ended August 19, which represented but 4 days of shut in production.

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Texas Hearing

Session becomes of national import as data on crude stocks show impending shortage. Plan to prolong production holiday found unwise.

Uncertain as to whether or not the meeting might lead to a prolongation of the recent shutdown, divided in opinion as to the sensibility of such a move, perspiring under the heat of a Texas August day, but in the full knowledge that before the day closed some family skeletons might be exposed, oil men from all over the United States met in Austin last Monday at a Texas Railroad Commission hearing which lived up to most of the press agenting it had received.

The affair was almost a one man show with Colonel Ernest O. Thompson, member of the commission, former chairman of the commission, chairman of the Interstate Oil Compact, and candidate for governor of Texas, as ring master.

The performers had had some advance schooling as to the part they should play as each had received a 19-question questionnaire to be answered under oath and the Colonel thought up a few extra questions on the spur of the moment.

First announced to be held in a downtown hotel, the attendance early gave promise of over-flowing the hotel and the meeting was moved to the House of Representatives chamber in the Texas State Capitol. The room was filled and the gallery partially so.

Most of the questions asked hewed fairly closely to the line set out in the questionnaire. Occasionally the Colonel strayed from the questionnaire and once it took a ruling from Chairman Lon Smith to bring him back.

Considering the conflicting views of those present the meeting was a surprisingly harmonious one.

Texas commission hearings are very informal, with witnesses under oath, but permitted to indulge in anything from personal reminiscences to opinions on matters upon which the witnesses declare themselves to be without information. Sometimes a member of the audience will get up and announce his desire to interrogate the witness, and frequently the questionings are only a cloak for a speech by the interrogator — but Monday everybody seemed to be put into a pretty good frame of mind early in the hearing by the admission of a highly important witness that the shutdown was pinching.

One question which Colonel Thompson first asked H. C. Wiess of Humble Oil & Refining Company and later asked all other witnesses, had to do with a report in an oil publication dealing with profits of a number of oil companies and the purported working capital of the companies.

Attendance at the Texas Railroad Commission's hearing August 28, overflowed the floor of the House of Representatives and partly filled the galleries.

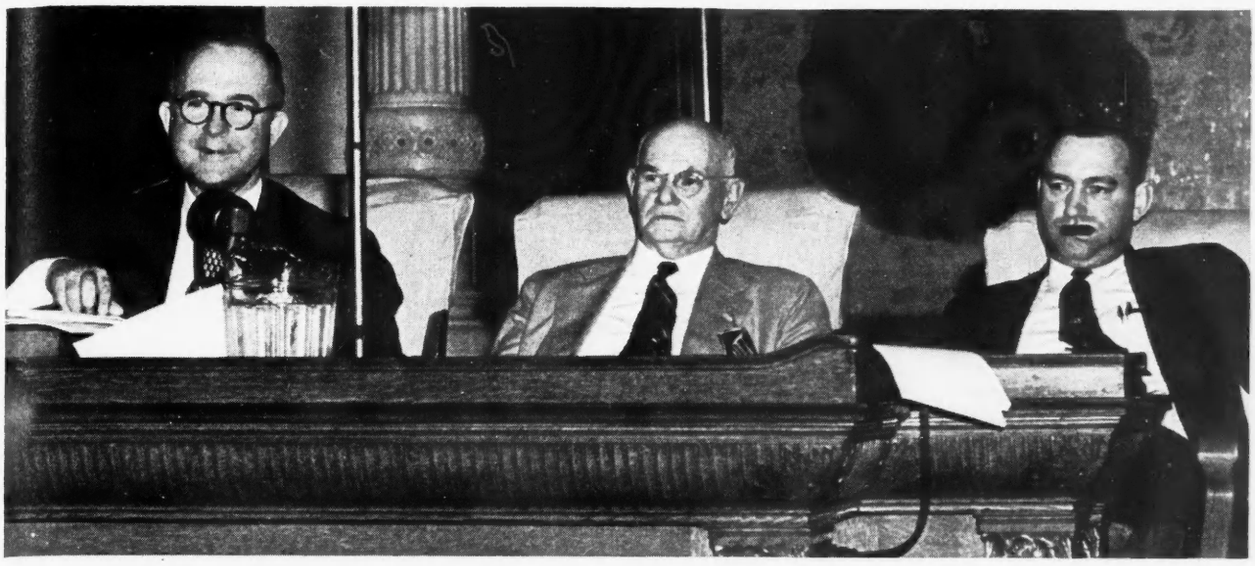
Question of Profits and "Working Capital"

When Thompson asked Wiess if he had seen the article in question and whether or not it was accurate, Wiess replied that he had not seen it. Without handing the paper to Wiess, Thompson read from it that Humble Oil & Refining Company had made profits of $46,924,001 with a working capital of $8,245,084 in 1937.

Hines Baker, Humble Oil & Refining Company director and member of the company's legal staff, objected to the question as not being pertinent to a proration hearing. The Colonel insisted. Wiess said that the profit figure was substantially correct but that he knew nothing about the "working capital" figure used by the publication. He said that it certainly did not represent investment.

All other witnesses were asked the question and while all confirmed the profit figure none of them could confirm the working capital figure and most of them made it clear that working capital and invested capital are not the same. None of the witnesses were given the paper so they could look at the figures themselves, or they would have seen that the table from which the Colonel quoted his figures gave the profits or losses of the company for a five-year period and that the colonel had picked on only 1937, the year of highest profits! They would have seen, too, that the publication included on the pages from which the Colonel was reading, a column which showed the capital investments of the companies.

Speculation was indulged in by some members of the audience as to the purpose of the Colonel in asking the questions and some, remembering that he is a candidate for governor next year, thought they saw the reason later when one of the newspaper men reporting the meeting confused working capital with investment and gave some of the



Commissioner Thompson (left) asked the questions, Smith (center) presided while Sadler dry-smoked a cigar.

companies credit for making several hundred percent profit in 1937!

Interest in Gasoline Prices

The interest of the Colonel in the gasoline consuming public, as frequently expressed in the meeting, was noticeable. On several occasions when the questioning did not seem to be going just right, he called the attention of the audience to the fact that his interest and that of the commission was in holding down gasoline prices for the consumer.

The meeting was almost altogether a Thompson affair. Lon Smith, chairman of the commission, who with Jerry Sadler has been found recently more and more frequently on the opposite side of the fence from Thompson, turned the meeting over to the Colonel right from the start and Thompson ran it almost as a one-man show. The Colonel's legal training showed evidence in the manner in which he cross-examined witnesses.

Smith sat practically expressionless through the meeting and Jerry Sadler sat with what this observer would term a half smile breaking around an unlighted cigar throughout the hearing. Only once did he ask a question—an unimportant one.

Smith twice was called upon to make rulings. Once he ruled that Wiess should not be called upon to answer, unless he wanted to, questions as to whom Wiess meant when he indicated that certain companies were paying less than the posted price. Wiess contended that, while he felt that he could rely on his information, he did not care to bring into the hearing accusations against individuals or companies and Smith sustained him. At another point Smith cautioned the audience about dropping cigarettes on the House of Representatives carpet.

C. C. HERNDON, vice president Skelly Oil Company: He made a "country boy" estimate that two-twenty to two hundred and forty million barrels of crude oil in storage was ok. His company might buy crude to help producers.

Sympathetic Groupings

Applause was frequent during the meeting. In most instances, however, it was spotted. Operators with similar persuasions seemed to have congregated in the hall in groups of like sympathies.

Consequently, when the Independent Petroleum Association of Texas (no relation to Chas. Roeser's group), presented, through E. E. Fogelson, president, a resolution which decried any effort at proration which might involve the accusation of price fixing, and deplored shutdowns as a method of maintaining balance, one portion of the room responded with hearty applause. When Judge Humphrey of the North Texas Oil and Gas Association read a resolution pleading for the stripper well and, in practical effect, for ratable takings at K-M-A, North Texas operators gave it a hand.

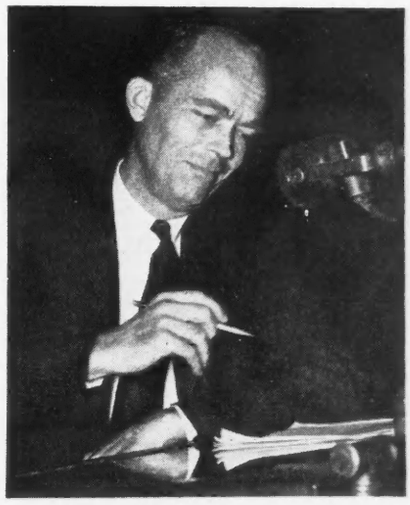
When R. H. Foster of Fort Worth offered a set of resolutions giving a several-point program, the most drastic suggested, he got a hand from another section.

Charles Roeser, Fort Worth, drew a sound round of applause when he said that he thought the shutdown had accomplished much, and counseled moderation in its continuance.

It was apparent from questions which Thompson asked him that the Colonel really wanted to carry the shutdown on several more days and finally Roeser compromised by agreeing that the shutdown would not hurt if continued until the commission had time to write a new order. As a matter of fact such an order was announced the next day but was rescinded when a flood of telegrams of protest came into the commission's office from refineries saying that they would be damaged by a further continuance of the shutdown.

To this observer it did not seem that Commissioners Smith and Sadler were nearly as anxious to continue the shutdown as was the Colonel.

Jack Blaylock of Houston made an impassioned plea to close the shutdown, saying that to continue it was an invitation to federal control—and



JACK PEW, Sun Oil Company: "Competitors fix our prices . . ." and later "Our company hasn't yet gotten back out of Texas the money we've put into it."

his plea brought a sectional applause.

But the expression which seemed to bring the greatest satisfaction to the crowd was that of President Wiess of Humble Oil & Refining Company in response to an inquiry early in the hearing from Colonel Thompson, who asked Wiess if he were not a "we bit short" of crude.

Wiess replied, with a grin which found ready response in the audience: "Well, we're not long!" and later said that available stocks of crude oil for his company's refineries were practically exhausted or would be by September 1.

Hearing at Austin reveals crude stocks not too great

Having drawn to the witness stand spokesmen for companies representing two thirds of the United States petroleum industry, the Texas Railroad Commission hearing at Austin on August 28 brought out facts, figures, and statements of policies that seemed to justify both the lifting of the oil field shutdowns and the restoration of former crude oil prices.

And so it was not surprising, following the hearing, that the shutdowns were terminated and that the former, higher prices for crude oil were generally restored.

The executives of 25 companies who testified at the hearing or filed sworn statements with the commission made it quite evident that very little surplus crude oil, above indispensable working stocks, would be left in storage at the end of the scheduled 15-day shutdowns. The testimony showed that most companies held approximately what they considered as necessary working stocks of crude and that some companies would even be short of crude following the closings. It showed, further, that unwanted crude stocks were largely in the comparatively strong hands of only a few companies, Standard Oil Company (Indiana) having indicated the largest surplus of 12,000,000 to 15,000,000 barrels and Socony-Vacuum Oil Company approximately 5,000,000 barrels. It was indicated, therefore, that the industry had almost attained the economic ideal of the smallest stocks of crude oil which operating requirements would permit.

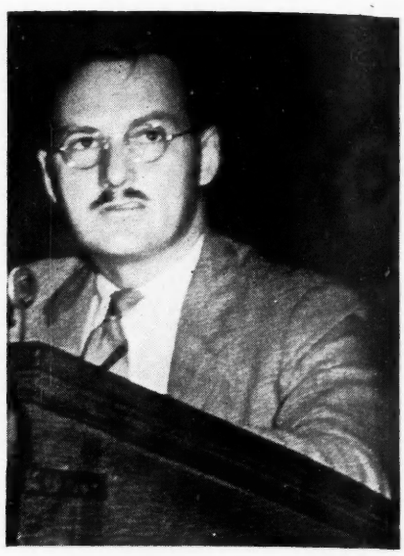
The testimony brought out, similarly, that most of the companies represented at the hearing were not carrying in storage much, if any, more gasoline than they considered as essential for conducting normal business.

Estimates were made by some of the witnesses as to proper levels of United States crude oil and gasoline inventories, and in most cases those estimates were materially lower than the current actual stocks. However, some of the estimators frankly characterized their figures as merely "country boy guesses." And some critics in the audience were disposed to look upon most of the estimates as reflecting the theoretical calculations of various petroleum economists, which those critics regarded as practically impossible of attainment, due to different requirements of different companies.

One oil company head commented unofficially, in this connection, that the economists deal too much in regional and United States totals and not enough in individual company requirements.

Stocks of finished and unfinished gasoline in the United States totaled 73,475,000 barrels on August 26, according to the American Petroleum Institute, and the stocks possibly will be little or no lower than 70,000,000 barrels on October 1. Yet the estimates of economically desirable inventories as of October 1 as given at the Austin hearing ranged only from 55,000,000 to 67,600,000 barrels and averaged 60,190,000 barrels, indicating a probable surplus of around 10,000,000 barrels at the beginning of the fall season.

Atlantic Refining Company made the highest estimate of what the national



A. J. McINTOSH, economist, Socony-Vacuum Oil Company: "The price should be high enough to return the producer a fair margin of profit." He didn't know who was importing the crude.

Gasoline Inventory Situation

As revealed in testimony before Texas Railroad Commission at Austin, August 28, 1939
(Figures indicate barrels of 42 U. S. gallons)

COMPANY	Stocks Finished and Unfinished	Change From Year Ago	Change From March 1, 1939	Stocks Required to Fill Pipe Lines and Tankers	Stocks at December 1, 1938	Expected Inventory at December 1, 1939	Estimated Proper Economic Levels of Gasoline Stocks					
							October 1, 1939		January 1, 1940		April 1, 1940	
							Company	Nation	Company	Nation	Company	Nation
Atlantic Refining Company	1,938,000	+ 320,000	— 33,000	408,000	1,448,000	1,526,000	.....	67,600,000	.....	72,700,000	.....	85,900,000
Barnsdall Refining Corporation	141,148	+ 23,985	+ 25,432	56,000	198,314	137,000	130,000	55,000,000‡	150,000	60,000,000‡	180,000	65,000,000
Cities Service Company	2,710,000	— 142,000	+ 23,000	726,000	2,565,000	2,412,000	.....	60,000,000	.....	65,000,000	.....	76,000,000
Continental Oil Company	1,188,848	— 30,172	— 397,239	.....	1,247,508	1,080,051	1,326,907	.....	1,266,907	.....	1,266,907	.....
Crown Central Petroleum Corporation	248,284	— 47,348	+ 112,701	41,500	166,303	90,000	‡	‡	‡	‡	‡	‡
Eastern States Petroleum Company	122,790	+ 36,410	— 181,635	75,000	197,249	100,000	‡	‡	‡	‡	‡	‡
Gulf Oil Corporation*	1,316,765*	— 360,000*	— 75,398*	500,000*	1,653,000*	1,200,000*	‡	‡	‡	‡	‡	‡
Humble Oil & Refining Company	2,073,684	— 308,638	— 212,444	15,000	2,158,339	‡	.....	63,000,000	.....	68,000,000	.....	81,000,000
Magnolia Petroleum Company	871,000	— 737,000	+ 166,000	9,000	690,000	700,000	800,000	.....	1,200,000	.....	2,000,000	.....
Maritime Oil Company	120,235	+ 70,724	— 13,496	.....	50,136	100,000	‡	‡	‡	‡	‡	‡
Ohio Oil Company	135,000	— 212,000	— 302,000	.....	244,000	197,000	‡	‡	‡	‡	‡	‡
Pan-American Petroleum & Transport Co.	2,159,000	+ 251,000	— 781,000	725,000	2,202,000	1,850,000	‡	‡	‡	‡	‡	‡
Phillips Petroleum Company	1,884,646	— 140,119	— 239,083	425,000	‡	1,463,000	‡	‡	‡	‡	‡	‡
Pure Oil Company	2,031,307	+ 186,879	+ 213,745	233,000	1,519,598	1,770,000	1,640,000	.....	1,710,000	.....	2,070,000	.....
Republic Oil Refining Company	668,047	+ 231,301	— 77,274	3,586	488,313	668,047§	‡	‡	‡	‡	‡	‡
Sinclair Refining Company	1,524,656	— 251,946	—1,098,574	565,000	2,504,700	1,827,000	‡	‡	‡	‡	‡	‡
Shell Oil Company	4,106,000	— 289,000	—1,026,000	414,000	4,036,000	4,000,000	.....	60,000,000	.....	65,500,000	.....	82,000,000
Skelly Oil Company	474,894	+ 7,365	+ 351,720	.....	425,271	350,000	.....	61,000,000	.....	64,000,000	.....	81,000,000
Socony-Vacuum Oil Company	6,909,000	— 486,000†	+ 345,000	849,000	5,512,000	5,615,000	.....	59,500,000	.....	63,600,000	.....	82,500,000
Standard Oil Company of Indiana**	5,257,396	— 95,072	— 727,181	.....	4,942,467	5,106,000	.....	60,000,000	.....	65,000,000	.....	75,000,000
Stanolind Oil & Gas Company	71,930	— 2,870	+ 3,410	5,300	51,450	61,200	.....	55,000,000	.....	55,000,000	.....	70,000,000
Sun Oil Company	1,860,000	+ 7,000	— 490,000	320,000	1,512,000	1,800,000	1,660,000	.....	1,930,000	.....	2,750,000	.....
Texas Pacific Coal & Oil Company	172,300	— 149,765	— 124,573	.....	781,635	781,635§	17,250	.....	17,250	.....	17,250	.....
The Texas Company	6,583,787	— 557,199	—1,331,961	3,112,000	6,167,625	5,244,749	.....	63,000,000	.....	71,500,000	.....	83,000,000
Tide Water Associated Oil Company	892,000	— 151,000	— 624,000	800,000	1,112,000	757,000	.....	58,000,000	.....	65,000,000	.....	80,000,000
Net Total 25 Companies	44,676,817	—4,056,107	—6,494,120	9,182,386	41,872,908	38,835,682	.....	.....	.....	.....	.....	.....
Net Total, all companies reporting for U. S. in each of first six columns	39,401,722	—3,246,690	—5,967,195	8,242,000	38,061,569	36,172,682	.....	.....	.....	.....	.....	.....
Average	.....	.....	.....	.....	.....	.....	.....	60,190,000	.....	65,027,000	.....	78,309,000

* Reporting Texas stocks only. † Decrease east of California. National change is an increase of 1000 barrels. ** And subsidiaries, excepting Pan-American Petroleum & Transport Company. ‡ No report rendered. § Implied by testimony. ‡ Furnished by Barnsdall Oil Company.

Crude Oil Inventory Situation

Table compiled by The Oil Weekly from data presented at Texas Railroad Commission hearing at Austin on August 28, 1939
(All figures in barrels of 42 U. S. gallons)

COMPANY	Crude Oil Stocks Aug. 1, 1939	Change from Mar. 1, 1939	Stocks Available for Dispatch	Stocks Required to Fill— Pipe Lines & Tankers	Stocks Required to Fill— Tank Bottoms	Stocks Dec. 1, 1938	Expected Stocks Dec. 1, 1939	Company's Estimated Crude Stock Requirements Oct. 1, 1939	Jan. 1, 1940	Apr. 1, 1940	[6]Company's Indicated Surplus (+) or Deficiency (—) of Crude Stocks	Company's Estimate of Desirable National Crude Stocks
Atlantic Refining Co.	4,568,000	[4]	1,400,000	3,168,000		5,038,884	4,376,000					244,000,000
Barnsdall Oil Co.	614,000	+ 180,000	18,000	576,000	[2]20,000	295,000	69,587				— [12]230,413	225,000,000
Cities Service Co.	6,264,000	— 540,000	1,070,000	5,194,000		7,474,000	5,700,000					
Continental Oil Co.	8,926,056	+ 127,000	1,364,873	7,561,183		1,323,783	1,266,907	1,326,907	1,266,907	1,247,508	— [13]1,200,000	
Crown Central Pet. Corp.	[14]326,175	— 272,329	118,713	107,462		164,732	400,000					
Eastern States Pet. Co.	72,567	+ 15,841	23,000	26,567	23,000	348,132	100,000					
[1]Gulf Oil Corp.	19,207,378	— 11,540,000	16,817,344	[11]1,370,178	[11]1,019,856	[17]7,775,000	[17]7,000,000				— [11]1,500,000	
Humble Oil & Ref. Co.	[7]7,628,529	— 503,000	2,000,000	2,307,708	3,320,749	12,324,181	[4]				— 4,371,471	260,000,000
[5]Magnolia Pet. Co.	[9]19,298,000	— 551,000	8,426,000	10,872,000		23,000,000	17,600,000	16,000,000	16,000,000	16,000,000	+ 1,500,000	
Maritime Oil Co.	36,837	— 33,000	31,837	5,000		80,000	70,000				— 38,163	
Ohio Oil Co.	9,944,797	— 367,755	9,944,797			10,017,952	9,950,000					
Pan-American Pet. Co.	2,358,000	— 565,000	1,818,000	540,000		3,238,000	[4]				[15]	
Phillips Pet. Co.	6,435,491	— 1,257,125	200,000			7,761,898	5,800,000				[11]	
Pure Oil Co.	4,000,228	+ 155,922	883,000	3,117,228		3,500,768	3,160,000	4,430,000	4,570,000	4,120,000	— 840,228	
Republic Oil Ref. Co.	521,501	— 765,510	162,179	359,322		765,763	800,000				— 279,000	
Sinclair Refining Co.	15,200,000	[4]	6,300,000	8,900,000		17,900,000	15,200,000				[11]	
Shell Oil Co.	[8]5,572,000	1,060,000	1,540,000	1,540,000	540,000	5,418,000	5,000,000				— 1,428,000	212,500,000
Skelly Oil Co.	520,000	+ 146,493	102,956	418,044		425,271	325,000					235,000,000
Socony-Vacuum Oil Co.	[5]24,290,000	— 706,000	3,429,000	3,429,000	1,913,000	27,823,000	22,338,000				+ 4,846,000	225,000,000
Standard Oil Co. of Ind.	34,220,268	— 1,727,642	27,370,225	6,850,043		37,583,361	30,905,406				+ 12-15,000,000	205,000,000
Stanolind Oil & Gas Co.	1,182,746	— 78,037	1,086,246		96,500	1,059,022	785,026				[11]	205,000,000
Sun Oil Co.	6,655,000	+ 835,000	5,085,000		1,570,000	5,449,000	6,700,000	6,700,000	6,700,000	6,700,000	— 45,000	
Texas Pacific C. & O. Co.	29,090	— 1,075	3,082	26,008		31,041	[3]31,041	30,000	30,000	30,000	[11]	
The Texas Co.	26,743,154	— 347,439	18,241,000	8,502,154		24,965,237	27,670,420				+ [10]7,743,154	240,000,000
Tide Water Associated	3,100,000	+ 1,763,000	2,250,000	850,000		4,269,000	3,100,000				[11]	245,000,000
[5]Net Total 24 Companies.	178,415,817	— 6,540,107	91,259,252	80,921,074		185,031,025	150,747,387				+ 17,656,879	
Net total all companies reporting in all of first six columns for U. S. (Excludes Gulf, Humble, Pan-American and Sinclair)	144,021,910	— 3,931,653	74,323,906	63,462,513		143,793,844	128,547,387					
Average												229,650,000

[1] Stocks for Texas only. [2] Furnished by Barnsdall Refining Corp. [3] Implied by testimony. [4] Not reported.
[5] Magnolia Petroleum Corporation stocks are included in Socony-Vacuum Oil Company totals. [6] Estimated from oral testimony.
[7] Estimated stocks on Sept. 1, 1939; company reported 11,757,481 bbls. as of August 1, 1939. [8] At August 18, 1939. [9] Company estimated stocks at 17,500,000 as of September 1, 1935. [10] Would like to reduce stocks to 18,000,000-20,000,000 barrels. [11] Present stocks satisfactory. [12] Expected shortage December 1, 1939; minimum requirements 300,000 bbls.
[13] Withdrawn from normal stocks due to shutdown. [14] August 21, 1939. [15] Shortage caused by shutdowns.

inventory of gasoline should be on October 1, having offered the figure of 67,600,000 barrels. Other estimates included those of 63,000,000 barrels by both Humble Oil & Refining Company and The Texas Company, 61,000,000 barrels by Skelly Oil Company, 60,000,000 barrels by Cities Service Company, Shell Oil Company, and Standard Oil Company of Indiana, 59,500,000 barrels by Socony-Vacuum Oil Company, 58,000,000 barrels by Tide Water Associated Oil Company, and 55,000,000 barrels by Barnsdall Refining Corporation and Stanolind Oil & Gas Company.

Estimates of what gasoline stocks should be on Januarv 1, 1940, ranged from 55,000,000 to 72,700,000 barrels and averaged 65,027,000 barrels, as shown in an accompanying table.

Similar estimates on proper gasoline stocks April 1, 1940, ranged from 65,000,000 to 85,900,000 barrels and averaged 78,309,000 barrels.

Crude Stocks

Whereas the Bureau of Mines reported 262,486,000 barrels of crude oil in storage in the United States August 19, the Austin estimates of economic requirements ranged from 205,000,000 to 260,000,000 barrels. Significantly, the bottom estimate, indicating a desire for further storage reduction, was that of Standard Oil Company (Indiana), which reported holding a surplus of 12,000,000 to 15,000,000 barrels; and the top estimate, indicating opposition to any further reduction of the nation's crude stocks, was that of Humble Oil & Refining Company, which reported a substantial shortage of crude in consequence of the protracted shutdowns.

Other estimates of proper crude stocks for the nation at present included those of 245,000,000 barrels by Tide Water Associated Oil Company, 244,000,000 by Atlantic Refining Company, 240,000,000 by The Texas Company, 235,000,000 by Skelly Oil Company, 225,000,000 by Socony-Vacuum Oil Company and Barnsdall Oil Company, 212,500,000 by Shell Oil Company, and 205,000,000 by Stanolind Oil & Gas Company.

N. K. MOODY, Sinclair Prairie Oil Marketing Company: "Our company likes to pay the highest possible prices for crude oil."

Most of the estimates of proper crude stocks contemplated no seasonal variations.

In addition to estimating the necessary national inventory of crude oil at 225,000,000 barrels, A. J. McIntosh, economist for Socony-Vacuum Oil Company offered a breakdown by states, which indicated how much too low or too high stocks were on August 1. The calculations were based on the present relationship between stocks and demand, or the number of days' supply on hand.

The breakdown was as follows:

State—	Barrels Excess or Deficiency
Texas	— 8,000,000
Oklahoma	+23,000,000
Kansas	right
Louisiana	— 700,000
Illinois	+ 8,600,000
Wyoming	+ 7,500,000
Others east of California	+ 5,350,000
Total east of California	+35,750,000
California	+ 9,250,000
Total United States	+45,000,000

No Buying for Storage

Although the testimony showed that most companies were down near the lowest practical levels on crude storage, it also brought out that none of

the companies wants to speculate in buying of crude or gasoline. The policy unanimously pursued is that of limiting crude storage, insofar as possible, to necessary working stocks, they said.

Such a policy is virtually imperative, according to most of the opinions expressed at the Austin hearing, because of the almost prohibitive cost of holding crude in storage for any material length of time. Estimates of the cost of storing crude ranged from 15 to 25 cents a barrel a year, and the estimates probably averaged 20 cents.

The company policies on storing crude were brought out in response to the railroad commission's question, propounded to all witnesses, "Would your company purchase crude oil for storage under any conditions, and if so, how much and under what conditions?"

Typical of the replies was that of J. S. Leach, vice president of The Texas Company, as follows:

"No. We believe that the cheapest storage for crude is in its natural reservoir, below ground.

"It costs money to build storage; we have to absorb losses through evaporation and other causes, as well as the loss of return on the capital tied up for such period as crude is held in storage. In addition to this, we have taxes and insurance on the stored oil. As a consequence, we believe it is not good business to carry excessive stocks in storage above ground."

Several companies stated, however, that they did and would buy limited quantities of crude in excess of their requirements in order to accommodate producers in need of market outlets.

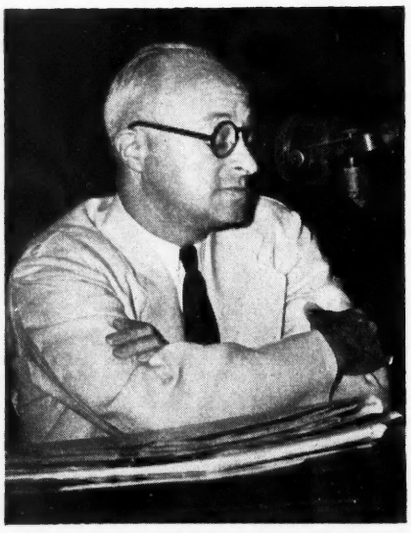
Buyers' basis for crude price schedules varied

ALTHOUGH it has been debated whether or not the state oil regulatory bodies can legally consider price in connection with their regulations and orders, the Texas Railroad Commission asked for and obtained at its August 28 hearing at Austin answers to the two questions:

"1. What factors does your company consider and how does it determine the price it will pay for crude oil?

"2. What factors does your company consider and how does it determine the price at which it sells refined products?"

The answers were mostly general in nature, however, having indicated that the companies based their purchasing prices of crude oil on numerous factors, including price realized from refined products, the supply and demand relationship, competitive conditions, postings of other buyers, under-market selling, competition for well connections, distance of wells from the ultimate markets, and refining value of the crude.



R. M. CHAN, comptroller, Magnolia Petroleum Company: "The price should be high enough to return the producer a fair margin."

K. S. ADAMS, President Phillips Petroleum Company: He thought the stripper well should have first consideration.

It was stated that highly competitive conditions largely determined selling prices of refined products, although most companies tried, in so far as possible, to cover cost of crude, manufacturing cost, overhead, transportation cost, taxes, and a reasonable profit.

Inasmuch as the Austin hearing was closely related to the recent crude price revisions and the Mid-Continent oil field shutdowns, particular interest was manifested in the statements of witnesses in answer to the question on determination of crude prices.

Questioned by Ernest O. Thompson, member of the Texas Railroad Commission, H. C. Wiess, president of Humble Oil & Refining Company, which August 11 cut crude prices, declared that an economic treatise would be required to explain factors determining the price of crude. In explaining this statement, on the insistence of Thompson, Wiess read a published statement of the company setting forth the reasons for the reduction it made August 11. He referred to unwanted crude, of which he said some 300,000 barrels daily had been selling below posted prices.

Thompson demanded a list of those companies which had been selling crude under the market, asserting the commission needed the information in order to eliminate wasteful producing of oil that was not wanted in the markets. Wiess refused to name any companies, and explained that the information had been worked up by the Humble organization from the best sources available.

Thompson insisted on revelation of names of companies and operators. But Hines Baker, Humble attorney, rose and declared that such information had no place in the inquiry; and his objection was sustained by Commission Chairman Lon A. Smith.

Following are the written answers of all the companies to the commission's question, "What factors does your company consider and how does it determine the price it will pay for crude oil?"

Atlantic Refining Company—Our primary desire and intent is to pay that price for crude oil which, when the oil is transported to and processed through the refineries, will enable us to obtain a reasonable profit based on current market price for products from such crude oils. However, we are on the one hand a relatively small factor in the crude oil market, and on the other hand, are required to purchase about two-thirds of our refineries' crude oil requirements; hence, in numerous cases to enable us to secure our supplies, we must compete with other buyers and pay the price established by such buyers.

Barnsdall Oil Company and Barnsdall Pipe Line Company—The main factor considered by this company is competition, which, in nearly all instances, is the price posted by the major purchasing company in the area from which we are purchasing. However, other factors, such as type and quality of crude, are considered.

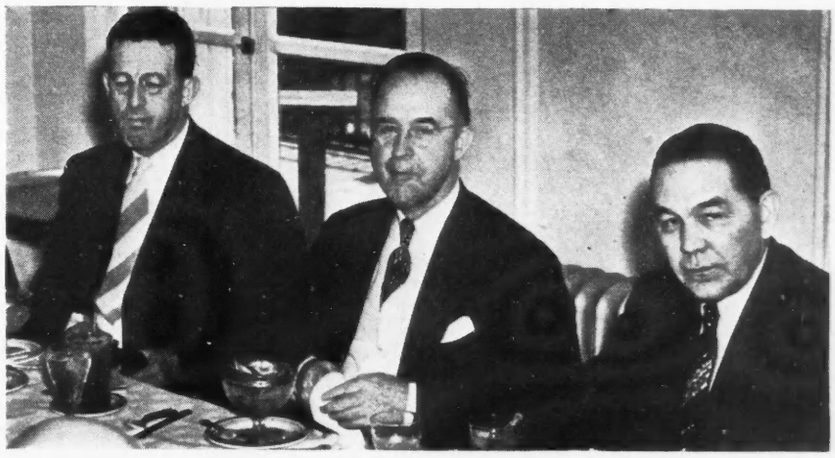
Barnsdall Refining Corporation—As we do not own or control any crude production, we must purchase our supply at the price posted by major purchasers.

Petroleum Operating Subsidiaries of Cities Service Company — Prices of crude oil are based on competitive conditions existing in the particular areas in which purchases are made. Such

FRANK PRIOR, vice president Standard Oil Company (Indiana): "Supply and demand determine prices in our company."

Other States Sent Men to Texas Hearing

Pictures taken at Interstate Compact Banquet



Above: W. J. Holloway, Oklahoma Corporation Commissioner; E. O. Thompson, chairman of the Interstate Oil Compact Commission and member of the Texas Railroad Commission; and Governor John E. Miles of New Mexico.

Above: Jerry Sadler, Texas Railroad Commission; Earl Foster, Oklahoma Corporation Commission; W. J. Armstrong, Oklahoma Corporation Commission; Ray Weems, Oklahoma Corporation Commission; and Hiram Dow, representative of New Mexico.

Andrew F. Schoeppel from the Kansas Corporation Commission with F. R. Frye, Michigan Conservation Division of Oil.

Lon Smith, chairman of Texas Railroad Commission; A. Andreas, New Mexico state geologist; Ralph Pryor, Kansas Corporation Commission; and T. M. Morgan, Kansas Corporation Commission.

prices are generally determined by following the prices set by the market leader companies in the various areas.

Continental Oil Company—The principal factors in determining the price of crude oil, as for any raw material are: (a) availability of crude to particular refinery; (b) quality of crude; (c) adaptability for use in company's equipment; (d) type, quality, quantity, and marketability of the products which the crude will yield; (e) the market demand for the products and the prices which they will command in the market; (f) transportation costs; (g) manufacturing and sales costs.

Crown Central Petroleum Corporation—We are not a factor in the posting of prices. We buy under contract usually based on the average posted price of several major companies.

Eastern States Petroleum Company, Inc.—We consider and can pay for crude on the value of products that can be produced therefrom less our costs and, if possible, a profit.

Humble Oil & Refining Company—Our company is but one of the many companies engaged in the purchase and sale of crude oil. The prices it will pay over a long period are determined by the forces of supply and demand, and in the end result from the interplay of the forces entering into competition. To attempt a complete answer to this question would require an economic treatise.

Magnolia Petroleum Company—We believe the price of crude oil should be high enough to return the producer a fair margin of profit commensurate with the hazards of the business. The price should be such as to delay the abandonment and loss of the small marginal wells and on the other hand compensate the producer from flush wells for that restrained production which engineering practice shows yields a far greater ultimate output than the former wide open practice. At the same time, the price should not be at a level which would penalize the consumers of petroleum products. Regardless of our views on the proper price of crude oil, the fact remains that for several years the price we have paid for crude has been determined by competitive conditions.

Maritime Oil Company—Upon the quality and quantity of various products determined by laboratory analyses and based on recognized published quotations.

Ohio Oil Company — Competition. Company principally producer and seller of crude. What few purchases we make are on a competitive basis.

Pan American Petroleum and Transport Company and Subsidiaries—Practically all our crude is purchased on the basis of prices posted by others, or contracts which fluctuate up and down with the posted prices of others. We also make occasional spot purchases if the crudes offered are attractive for use in our refinery.

Pure Oil Company—The value of crude oil at the well is dependent principally upon two factors: first, the kind and quality of products refinable therefrom and, second, the cost of movement to a common refining center.

Republic Oil Refining Company—We consider the crude from both our own refinery operations and from the requirements of buyers of crude. We consider the products which the different crudes will produce and the prices that said products will bring, the cost of transporting the crude to the market or refinery and above all the price paid by competitors.

Shell Oil Company, Inc.—We consider the factors of supply and demand, competitive prices, distance from the ultimate markets, refining value, amount of under-market oil, competition for connections, etc. We determine purchase prices from these factors which, of course, vary in importance among different pools and crudes and with the circumstances existing.

Socony-Vacuum Oil Company, Inc.—We believe the price of crude oil should be high enough to return the producer a fair margin of profit commensurate with the hazards of the business. The price should be such as to delay the abandonment and loss of the small marginal wells, and on the other hand compensate the producer from flush wells for that restrained production which engineering practice shows yield a far greater ultimate output than the former wide open practice. At the same time, the price should not be at a level which would penalize the consumers of petroleum products. Regardless of our views on the proper price of crude oil, the fact remains that for several years the price we have paid for crude has been determined by competitive conditions.

Standard Oil Co. (Indiana) and Subsidiaries—The price we will pay for crude oil is determined principally by supply and demand, but consideration is also given to prices paid by competitors and to prices being currently paid for petroleum products.

Stanolind Oil and Gas Company—Stanolind Oil and Gas is primarily a producer of crude oil and gas in the states of Wyoming, Colorado, New Mexico, Kansas, Oklahoma, Texas, Louisiana, and Michigan. It is not engaged in the business of buying oil as a general purchaser. The price paid by Stanolind Oil and Gas Company for oil that is purchased is determined on the basis of the price posted by competitive buyers for oil of like grade and gravity in the area where produced or on the basis of the price that Stanolind can obtain for such oil when resold.

Sun Oil Company—The Sun Oil Company can only consider competitive market conditions as the basis for the price which it will pay for crude oil.

The Texas Company—We would like to see crude oil priced at such a level that would enable the average small well operator to make a reasonable profit, as we believe that in the interest of conservation this type of production should be preserved. However, under prevailing conditions, crude cannot be priced exclusively on such a basis and the following factors are taken into account: (1) prices paid by our principal competitors, particularly the largest buyer in such field; (2) the price and amount of crude sold under the prevailing posted price of the principal buyers; (3) price realized for refined products; (4) the amount of crude oil available for purchase through the normal application of the rule of supply and demand; (5) generally, in posting prices, we follow the largest buyer in each area if we think his evaluations are correct, but in many instances where we may disagree as to the values of the crude, we post different schedules.

Texas and Pacific Coal and Oil Company—Follows major purchasers.

Tide Water Associated Oil Company—In no producing field are we a sufficiently dominating purchaser to initiate changes in the posted price for crude oil. It has, therefore, been our custom to merely meet competitive conditions and follow the changes made by major buyers in the fields where we post prices.

Independents opposed shutdown extension

Although the Mid-Continent shutdowns had the general support of operators, as evidenced by the scarcity of court attacks against the emergency orders, several organizations of independent operators expressed disapproval of extension of the closings when the Texas Railroad Commission held its important hearing at Austin August 28.

The East Texas Oil Association, through H. P. Nichols, president, asked the Railroad Commission to continue the shutdown until the price was restored. He likewise requested that the allowable be set below the figure recommended by the U. S. Bureau of Mines. The Independent Petroleum Association of Texas (not to be confused with the Independent Petroleum Association of America) indicated its opposition to the shutdown in the following statement, which was read into the record by E. E. Fogelson, president of the organization:

"The Independent Petroleum Association of Texas respectfully petitions the Railroad Commission of Texas to consider the following facts and conclusions in the promulgation of further oil and gas proration orders, rules and regulations.

"The Independent Petroleum Association of Texas, throughout its long life has been committed to the principle of conservation of the oil and gas resources of this state. It has shown constant fidelity to this cause by consistently and seriously supporting the Railroad Commission in its every effort to prevent physical waste of oil and gas. This association has in the past, is now, and will in the future, continue to support the Railroad Commission in the enforcement of its orders designed to prevent physical waste of these essential resources.

"This association is equally as well known for its unalterable opposition to Federal control of the production of oil within the boundaries of the sovereign states. It believes that price fixing, whether by government or monopoly, is unconstitutional and inimical to the genius of a free people. It believes that when a state government, has through the reasonable exercise of its police powers prevented physical waste of its natural resources it has then done all that it can legally do, and all that it is desirable for it to do from the standpoint of conservation.

"This association deplored the recent strife in the oil industry and is firm in its belief that if this Honorable Commission will issue all future orders with the single purpose in mind of preventing physical waste of the oil and gas resources of this state the economic condition within the in-

dustry will take care of itself. That as a result of such action there will be preserved to those engaged in the industry the right, which we hold to be inalienable, of managing and conducting their own business free from the unwarranted interference of a bureaucratic federal control.

"This association is opposed to any shutdowns of the oil fields of Texas believing such shutdowns to be inconsistent with the principles above announced and feeling that in the years to come such action would lead to the regimentation of those engaged in this vital industry, to the everlasting detriment of the American people."

Charles F. Roeser likewise expressed the opinion that no further shutdowns were needed. He estimated that the two weeks' shutdown would remove 20,000,000 barrels from storage and recommended that Texas take the lead in reducing all allowables 20 percent. He objected to the granting of special allowables.

Asked whether he approved an additional five-day shutdown "to get the job done" Roeser told Commissioner Ernest Thompson that he thought this was unnecessary.

Allowable Picture

Production shutdown terminated when purchasers restore price postings . . . New plan for East Texas expected to start fire works September 11

Oil shutdowns lifted as crude prices restored

After 2 weeks of unprecedented operations, in which 6 of the leading producing states closed in over 60 percent of the United States' usual daily crude production in retaliation to drastic crude price cuts, the oil industry returned to normalcy the past week; as crude oil prices were restored to their former level and as the shut down of production was terminated.

Events of the week broke fast and furiously, with the result that: (1) Following the important joint meeting of the Texas Railroad Commission and the Insterstate Oil Compact Commission in Austin on August 28, it was announced that the production shutdowns would be extended 2 days until September 1; (2) The next day, Humble Oil & Refining Company, largest Mid-Continent buyer of raw oil, and several other purchasers rescinded their reduced crude price schedules; (3) Immediately thereafter, on the same day, August 29, the Texas Railroad Commission decided not to extend the announced production holidays; consequently, other states did likewise as soon as physically possible.

Therefore, both prices and production returned to their levels of the preceding months. Meanwhile, however, it was indicated that production of the United States in September would be held to lower quotas than in recent months. The leading producing states adopted allowables that were considerably beneath the Bureau of Mines estimate of the month's demand, and it was anticipated that crude oil stocks would continue to be drawn upon.

The Texas Railroad Commission was the ring leader in the fast juggling acts of the week. This commission has long been known for its remarkable ability to change its mind, that none of its decisions seem to be irrevocable, and that the next ruling is always unpredictable. However, the commission broke all records for surprises last week.

Monday night, Chairman Lon Smith announced at the Interstate Oil Compact Commission that there would be a two-day extension of the shutdown.

Tuesday afternoon, Smith issued an announcement (following restoration of crude prices by Humble Oil & Refining Company) stating the shutdown extension was off, and that production in Texas would be resumed on Wednesday morning, August 30. Commissioner Ernest O. Thompson, and chairman of the Interstate Oil Compact Commission, hastily phoned the other five oil-producing states that had agreed to shut down and advised them that a majority of the Texas commission declined to sign the shutdown order.

Wednesday noon, all three commissioners signed a prepared statement calling a statewide hearing for September 11. It was declared that the commission planned to raise the East Texas field allowable 110,000 barrels, in accordance with recent court rulings, but that the total allowable of the state would be reduced approximately 15 percent.

The situation among several large and small refining companies last week was that they did not have sufficient crude available to continue regular operation of their stills if the shutdowns had been extended. One large company already had reduced its runs by 50 percent and was faced with still further drastic reductions or a complete shutdown. Still another company which had not reduced runs to stills was faced with practically a shutdown.

As the week closed there was a strong probability that runs toward the latter portion of the week would be reduced on the part of a number of refineries because the plants would not be able to secure crude in time, even in face of the lifting of the shutdown, to continue normal runs. This applied to both large and small refineries.

In explaining why the shutdown extension was abandoned, Texas Railroad Commission Chairman Smith said: "We had telegrams and telephone calls from everywhere telling us refineries will have to close down if the shutdown is continued until Friday. That shows the shutdown certainly has caused a dearth of oil. It's needed. That is reason enough to change our minds. We have two requests for 42,000 barrels each to finish filling tankers docked at Corpus Christi paying $900 a day. The shutdown has done the job. The Humble price restoration was stimulation for the whole industry."

Ickes opposes use of shutdowns again

The recent shutdown in several major producing states in reaction to crude oil price cuts was termed last week by Secretary of the Interior Harold L. Ickes as having been effective in keeping the price of oil up, but he warned against repetition of the performance should a similar situation again occur.

"I do know that it has had only one effect," he said, "and that is to keep prices up. That is not going to please consumers. It is a price-fixing device and not a conservation measure at all."

Texas' course to be determined September 11

The Texas Railroad Commission has scheduled a state-wide hearing for September 11 at Austin that promises to be one of the most hectic and important meetings in the history of proration. At this hearing, the commission will explain to the operators of the state its proposed solution and order for the East Texas proration question.

The commission is confronted with the problem of readjusting allowables between wells in the gigantic field, which means raising the pool's allowable materially, as the result of recent court injunctions against its orders; and at the same time it desires to bring the total allowable of the state down to 15 percent under the Bureau of Mines' estimated Texas demand for September.

Therefore, this meeting will determine not only whether the commission is successful in meeting the court's ideas on East Texas proration but also what the state's production course is to be.

The announcement calling the hearing indicated that the order has been prepared already, and that a definite plan of proration for East Texas and for allocation of allowables throughout the state will be up for consideration.

After asserting that it appears the commission must allocate to the East Texas field at least 488,000 barrels of oil per day (an increase of 110,000 barrels) in order to satisfy the requirements indicated in the federal court decisions, the announcement stated:

"It is the idea of the railroad commission of Texas that for the next few months, we should limit our production in Texas to a figure approximately 15 percent below the estimate of the Bureau of Mines for the reason that the Bureau of Mines' estimated demand does not allow in its estimate for any withdrawals of stock from storage.

"At the hearing held in Austin on

Monday, August 28, 1939, it was brought out that there is at this time approximately 30,000,000 barrels surplus crude oil in the United States and approximately 10,000,000 barrels surplus gasoline in storage in the United States."

The announcement then went into a discussion of the allowable statistical position and outlook for the state. A study of the figures reveals that drastic changes are in prospect for the various producing districts. While East Texas stands to gain 110,000 barrels daily, the remainder of the state would lose about 260,000 barrels of oil it has been producing.

The proposed 15 percent reduction from the Bureau of Mines' estimated demand figure of 1,408,300 barrels for the state would amount to 211,055 barrels; leaving a total daily net allowable of 1,197,055 barrels to be produced. Since the commission has indicated that 488,000 barrels of this volume is to be allocated to East Texas, a total of 709,055 barrels would be left for all the other fields in Texas. In July, the marginal allowable of these fields totaled 611,375 barrels, which would mean that only 87,680 barrels of the proratable oil would be available for distribution outside the East Texas field.

On August 28 the commission reported the total basic allowable was 1,875,090 barrels. The East Texas increase proposed would raise this total to 1,985,090 barrels. In the past it has been customary for the commission to close down eight days of production each month. If this procedure is followed on the 1,985,090 barrel figure given above, the total daily net allowance would be 1,455,732 barrels. Therefore, if the commission hopes to cut production back to a point 15 percent under the Bureau of Mines' estimate of demand, which would be 1,197,055 barrels, it would require that 258,677 barrels must be taken from the net allowable assigned fields outside of East Texas.

Railroad Comissioner Jerry Sadler has stated that the commission will receive no new evidence on East Texas at the hearing on September 11. He is of the opinion that the commission received enough evidence in the Humble hearing to furnish the basis for a ruling. This hearing was on Humble's application for an adjustment in the allowable of the East Texas field. It began on August 15, and for six days thereafter, every phase of physical waste and many other matters were gone into through a series of five witnesses.

Sadler, however, agreed that the case could be argued, and certainly if the commission presents its proposed orders, contents of which have not been revealed, a storm of debate will be loosed.

The East Texans can be depended upon to fight for every barrel of oil they can get for their field. Likewise, operators from the remaining fields of the state will, undoubtedly, make every effort to restrain East Texas and also prevent the drastic cuts which are contemplated for their properties.

Texas Allowable Comparison

DISTRICT		Allowable 8-1-39	Allowable 8-28-39
1	Southwest Texas...	38,788	38,474
2	Southwest Texas...	72,369	73,655
3	Gulf Coast.....	295,983	304,519
4	Southwest Texas...	207,981	213,011
5	East Central Texas.	34,483	34,603
6	East Central Texas.	88,082	88,533
6	East Texas Field...	523,522	523,823
7-B	West Central Texas.	39,809	41,048
7-C	West Central Texas.	29,651	29,664
8	West Texas.....	294,398	306,639
9	North Texas.....	127,137	129,509
10	Panhandle.....	91,019	91,612
		1,843,222	*1,875,090

* Basic allowable on proration schedules without taking shutdowns into consideration.

Well potential basis to be applied in East Texas field

Substitution of the well-potential basis for apportioning production allowable in the East Texas field for a plan that will incorporate sand thickness, average per-well potential and bottomhole pressure in determining the production quota of each of the 3660 leases will be undertaken by the Texas Railroad Commission. The change is being made as a compromise measure to eliminate the extra production quota assigned Rowan-Nichols Oil Company and Humble Oil & Refining Company after each obtained relief through federal court injunctions, and also the immediate threat of other operators taking court action.

All available engineers of the commission and a voluntary corps of engineers furnished by operators began work last mid-week under the direction of Dr. F. Z. L. Patten, chief petroleum engineer for the commission, compiling the data needed to ascertain the allowable of non-marginal leases based upon the above three factors. An effort is being made to complete the revised proration schedule for consideration by the commission at its state-wide proration hearing scheduled for September 11. If the new plan is adopted it probably will not be applied to the field until October 1.

Announcement has been made by the commission that the allowable for the East Texas field will be raised from about 373,500 barrels to 488,000 barrels daily, based upon 5-day week. This increase will be assigned to leases that qualify under the three factors for a greater allowable than the 20-barrel

Lower allowables mark emergence from shutdowns

Determination of the industry to avert another situation such as the one that contributed to the recent price cut was evident in the lowered September allowables posted by three of the Mid-Continent states, and expected to be followed in Texas after a hearing scheduled on September 11. Arkansas is the only one of the "striking" states electing to continue pre-shutdown quotas in effect.

While allowables now in effect are but 0.7 percent below the Bureau of Mines' estimate of requirements during September, the anticipated mid-month Texas slash would reduce the prorated states' output to a level five percent below the bureau's figure. This would compare with allowables in the six states that were only 2 percent under the bureau figure in August. However, on the other hand, the delay in Texas will destroy a part of this achievement.

Texas will continue its present allowable until after the hearing on September 11. This means, according to figures of the Railroad Commission on August 28, that the state will produce 1,455,000 barrels daily until a new order is issued. However, the commission has indicated it expects to cut this back to around 1,200,000 barrels after the hearing, which would be 15 percent under the bureau's figure.

Last week, Arkansas, Oklahoma and Kansas fixed their allowables.

Arkansas gave 34,350 barrels to prorated fields and 28,900 barrels to stripper fields, for a total of 63,250 barrels.

The Oklahoma Corporation Commission set allowable for Oklahoma during September at 384,950 barrels daily, a reduction of 43,050 barrels from the August figure and 44,350 barrels below the Bureau of Mines estimated demand for the month.

Stripper wells will be granted 155,000 barrels daily with the remainder going to prorated fields, a large reduction for those areas. Maximum allowable for Class D and unclassified pools was set at 60 barrels.

September allowable for Kansas was set at 147,705 barrels daily by the corporation commission. This represents a 15 percent decrease in daily production from all prorated pools, being 16,295 barrels under the August allowable of 164,000 barrels.

Allowables for September Under Indicated Market Demand

(Barrels Daily)

STATE	Bureau of Mines Forecast of Demand	State Allowable Beginning of Month	Excess or Deficiency of State Allowable	Percent Excess or Deficiency
Arkansas	50,700	63,250	+ 12,550	+ 24.8
California	596,000	598,300†	+ 2,300	+ 0.4
Kansas	166,300	147,705	— 18,595	— 11.1
Louisiana	255,700	235,475	— 20,225	— 7.9
New Mexico	108,700	100,000	— 8,700	— 8.0
Oklahoma	429,300	384,950	— 44,350	— 10.3
Texas	1,408,300	1,455,000*	+ 47,000	+ 3.3
Total for seven States	3,005,000	2,984,680	—20,020	— 0.7
Other States	505,700	.....	.....	.....
Total United States	3,510,700	.....	.....	.....

† Recommendation of Central Committee of California Oil Producer's Association.

* August allowable extended until hearing on September 11; daily average considering Saturday-Sunday shutdowns, water exemptions and exemption at Rodessa.

daily marginal. The field currently has 26,061 wells on the proration schedule, and under the well-potential method of distribution, 19,520 wells are classed as marginal producers.

The proposed new order for the field will be based upon the formula presented by J. S. Hudnall, consulting petroleum engineer and geologist of Tyler, when serving as a witness for the state at a recent hearing on Humble Oil & Refining Company's application for an adjustment of its lease allowables. The Hudnall formula provides for a numerator, which will be the number of acre-feet of sand thickness beneath a given tract, multiplied by the average per-well potential of the wells on the tract, multiplied by the bottom-hole pressure; the denominator will be the number of acre-feet of sand in the entire field multiplied by the average potential of all wells in the field multiplied by the average bottom-hole pressure of all wells in the field.

Preliminary figures credit the field with 133,000 producing acres with an aggregate of approximately 5,208,000 acre-feet of sand thickness.

The average bottom-hole pressure for the field was 1,114.81 pounds, according to commission survey made August 21.

Top allowable of wells that are supported with a combination of thick sand section, high potential and bottom-hole pressure is expected to increase from 25 to 50 barrels daily. The increased allowable will largely center upon the so-called fairway section of the field, thereby causing a variation in withdrawals that may be of sufficient proportions to influence water encroachment and the reservoir pressure.

East Texas federal court overrules tender board

The Federal Tender Board was overruled by Federal Judge Randolph Bryant at Sherman on August 31 in its refusal to approve tenders for extra production allowables in the East Texas field previously granted two producers through federal court injunction suits.

The board had cancelled Rowan-Nichols Oil Company's approved tender for 220 barrels of daily allowable from its Todd five-well lease during August after 1856 barrels had been delivered to Tidal Pipe Line Company up to August 19. This action was based on instructions given the board by the Attorney General's department at Washington, according to reports.

Humble Oil & Refining Company's 16,000-barrel hike in daily allowable, representing about 44 percent increase granted August 10 by a federal court injunction, was refused a tender by the board at Kilgore hearing on August 28. The Texas Railroad Commission had previously approved supplemental tenders for 87,756 barrels to cover the extra production quota for August 11, 14, 30 and 31.

The Federal Tender Board ruled in a four-page statement that Humble Oil & Refining Company's federal court injunction does not show on its face that it applies to the Federal Tender Board, or that the board was a party to the suit. The statement added that the requested tenders called for an increase in production not in keeping with the commission's proration order for the July 1 to October 1 period. It was further held that the extra allowable would be contraband within the meaning of the Connally Act.

Illinois production control legislation gets support

Four important developments pointing to enactment of production control legislation in Illinois took place last week:

1. President Roosevelt intervened in a situation said to be demoralizing the country's petroleum industry by writing Governor Henry Horner of Illinois regarding possible participation of the state in conservation measures of southwestern states.

2. The Petroleum Association of Illinois, reversing its former position, declared itself in favor of a program embracing "a degree of control of production without the strict proration system that the other states and major companies have wanted this state to have."

3. Lieut. Gov. John Stelle, foremost among state officials fighting proration proposals for Illinois, declared himself in favor of conservation but "not in favor of what the major oil companies want, a sort of proration to be dictated by the American Petroleum Institute."

4. Pure Oil Company, which opposed proration legislation when first proposed a year ago, changed its stand. President Henry M. Dawes, in a public statement, declared that "in our opinion the general good of the state would be served by the passage of an act for the regulation of oil field operations that is based upon the conservation of natural resources."

Neither President Roosevelt nor Illinois state officials immediately made public the texts of the letters that passed between the president and Governor Honer. They were turned over to the Petroleum Conservation Commission. President Roosevelt made it clear, however, that he did not urge a special Illinois legislative session for consideration of oil control legislation, declaring this was something for the governor to decide.

Independents Reverse Position

The stand of the Petroleum Association of Illinois was given in a letter by its president, Clarence Smith, of Flora, to the lieutenant governor, asking his specific views on proposed regulatory legislation. "We have led the fight against proration up to now," Smith said. "This may easily be the turning point in the fight. If all the interests can agree on a program, it has been indicated the subject of oil conservation would be included in the call of the special session of the legislature Governor Horner has indicated he will call this fall."

The lieutenant governor maintained the entire question of oil regulation has resolved itself into a fight among the states. "When Illinois was a mere nobody in the oil production picture, no one worried about her," he said. "When we were producing some 15,000 barrels a day, who cared? We could produce everything we wanted to. No one worried then. Now when our actual production is in excess of 300,000 barrels a day and when our allowable is 201,000 barrels, the matter is entirely different.

"Why? Not because of over-production," he said. "That is hooey. Do you know that today crude oil stocks above ground are lower than they have been for 12 years? Yet some companies would have the price of crude cut in Illinois. They say it is to prevent overproduction. We are 23 cents favorable on pipe line transportation costs because we are that much closer to the markets, but do we get any benefit of it. Not a dime, not a cent, nothing."

Explaining that he was in favor of a program of conservation of the state's resources, he contrasted his stand with proration which he described as a method to conserve waste, not of oil, but of money in the search and production of oil and to which he said he was unalterably opposed.

The Pure Oil Company statement came after Roy M. Johnson, policy chairman of the Oklahoma Stripper Well Association, charged that "chaotic conditions" in the industry were caused by unregulated production in Illinois, of which Pure Oil Company controls about 8 percent. Johnson's letter, directed to Dawes, expressed hope that the recent shutdowns "will be sufficiently impressive to your company that you will join the other leading Illinois producers in urging the immediate convocation of the Illinois legislature to enact the necessary legislation to bring order out of chaos in the oil fields of Illinois."

Federal officials suggest Illinois conservation

Grave dissatisfaction of federal administration officials in Washington with the threatened demoralization of the oil industry, to which the state of Illinois is declared to be contributing by reason of unrestricted production and shipment, is seen in the disclosure by President Roosevelt last week that he had written letters on the subject to Governor Horner and his lieutenant governor.

The President discussed that matter briefly at a press conference August 29, revealing that he had written the letters and that a reply had been received and referred to the Interior Department for consideration and the preparation of another communication to state executives if that was deemed necessary. He declined, however, to disclose the contents of the correspondence.

The President denied reports that he had suggested the calling of a special session of the Illinois legislature for the consideration of remedial legislation, declaring that was something for the governor to look into. However, the manner in which he answered the questions at his press conference left the impression with some observers that this is what he thought Governor Horner should do.

The situation is that six states recently decided to stop the production of oil in retaliation against drastic price cuts by some purchasers, but that Illinois, which has been an important factor contributing to the present situation, took no steps toward curtailment.

Government officials, it was reported, particularly those interested in securing federal control laws for the petroleum industry, have been carefully watching

developments. It is believed that it was the information that they have gathered which was the basis for the letter sent by President Roosevelt to Governor Horner.

It was found that Illinois production has risen from a daily average of 5000 barrels in 1937 to something over 300,000 barrels at the present time.

Commentators declare, however, that Illinois producers did not materially benefit from the failure to join in curtailment, since difficulties were being encountered in moving oil out of the state because of already over-taxed pipe lines.

Washington's Cue

In Washington, it was represented that the Illinois situation is an illustration of the need for the control legislation introduced in the closing days of the last session of Congress at the request of the President, on which the Cole subcommittee next month will begin investigations.

At a press conference August 31, Secretary Ickes expressed hope that the Illinois legislature would adopt control legislation at a special session to be called this fall.

Governor Horner, he said, is anxious for such legislation and the federal government is "supporting his efforts to get a conservation law through the legislature." However, he added, Lieutenant Governor Stelle has led the vigorous opposition to such legislation, and the governor does not want to put the matter on the special session agenda unless he has reason to believe a law would be enacted.

Secretary Ickes stressed the need of controlling waste of natural gas now permitted in the Illinois field, which department experts described as a low-pressure area where pumping would probably have to be resorted to "within the next 30 days" because of the waste. Daily average production in the field is figured at about 310,000 barrels daily.

"So far," he said, "we have been unable to get any cooperation on conservation from the state. It is a flush field and like all flush fields they don't give a damn what happens in other producing states."

Referendum on California control bill probable

Approximately 260,000 signatures have been filed with 27 county clerks throughout California calling for a referendum on the Atkinson oil control bill that will become a law September 19, unless it goes before the people to be voted upon.

A writ of mandate is being argued before the State Supreme Court to prevent the secretary of state and state printer from including the measure on the ballot for the November 7 special election. Attorneys representing opponents of the bill say there is insufficient time for voters to familiarize themselves with the Atkinson oil control bill and want it voted upon at the next general election to be held in November, 1940. The attorney general recently ruled that any referendum qualified in time would go on the same ballot with the Ham & Eggs measure. Only 132,573 signatures were required to bring about a referendum on the Atkinson bill, however many of the 260,000 signatures said to be listed are expected to be ruled out for various reasons.

Meanwhile, the present voluntary method of handling oil curtailment problems in more than 60 oil fields in California continues under the sponsorship of the Central Committee of California Oil Producers. At the recent regular meeting the committee set a quota of 598,300 barrels daily for September, and figures made available by J. R. Pemberton, oil umpire, disclosed that as of August 28, the state produced 601,200 barrels of oil, being just 2900 barrels daily over the desired level.

Michigan to continue output at emergency rate

J. P. Hoffmaster, supervisor of wells, and the Michigan Oil Advisory Board, has indicated that it is almost certain to carry on with reduced proration allowables for 60 to 90 days after Hoffmaster's 21-day emergency order expires September 14.

A public hearing to review the proposed new schedule (same as the emergency schedule) has been called for September 6 in Lansing.

The emergency schedule cut flush fields from 25 to 50 percent with 100 barrels per day the top on 10-acre locations and 200 barrels the top on 20-acre locations.

Hoffmaster said pipe line and refinery nominations and forecasts of markets for the next 60 days indicated that unless the emergency schedule is made permanent "supply and demand will get dangerously out of balance in Michigan."

Neither the emergency schedule nor the proposed permanent schedule is expected to make any material reduction in the gross state daily runs, now between 65,000 and 70,000 barrels per day. Hoffmaster pointed out that the rate of completions in proven areas is fast enough to keep ample supply of crude for current markets.

Tender board created at Lansing, Michigan

Establishment of an investigative office under the Connally "hot oil" law, at Lansing, Mich., was ordered by Secretary of the Interior Harold L. Ickes August 31 in a step to aid the state authorities to enforce the oil legislation approved by Governor Dickinson on May 3, last.

The office will be in charge of Examiner John I. Watson, who will be transferred from his present post at Kilgore, Texas.

Establishment of the office, it was explained, was in conformity with an executive order charging the secretary of the interior with the responsibility of aiding the states to enforce their regulations, in connection with the administration of the Connally law.

Oil and War

Adequate supplies of gasoline and fuel oil one of critical problems as Europe takes the field.

Acquisition of adequate supplies of oil and oil products in the European war will be one of the most critical problems to be faced by belligerents, informed sources in Washington said last week.

Throughout the world, men engaged in oil production and refining are asking the questions—how will a general war in Europe affect us? What will it do to the demand?

This question can be answered by saying that war needs will speed up oil demand from several standpoints.

Planes, trucks, and tanks which may be in the supply stores of the warring nations will go into action and that will mean a big increase in demand for crude. Even the private cars, which have substantially increased peace-time demands for gasoline during the past several years in Europe, apparently will not be standing in garages. Fast transport—improved roads—will put many of them into war use. That has already happened in some of the nations involved.

The bunker problem alone will be gigantic. Fleets which have been at anchor will be on patrol.

In America, where the majority of the people favor neutrality, but fear being dragged into the war, speeding up of necessary industry, whether the U. S. A. goes into war or not, will speed up petroleum consumption radically.

Where Will Supplies Come From?

Where will the oil come from?

If Italy goes in (Italy had not gone in when this was written but was a question mark), Italian submarines will make tanker traffic hazardous in the Mediterranean, Iraq oil would get to market under difficulties. Oil from Iran and Burma, as well as the East Indies might have to be transported around the southern tip of Africa—a lengthy and expensive voyage.

Unquestionably, South American oil would play a big part. But refining capacities in the West Indies and South America are not sufficient to process the oil which will be needed.

The United States will unquestionably be called upon to furnish a material part of the supply. True, South America is new in the picture since the World War, but Mexico played a big part in that war and Mexico's Nazi customers will not be able to get to the Mexican supply and Britain will not likely want to pay for that which has

been taken from her nationals in Mexico.

It probably will take some time to organize transport from the western hemisphere. England and France are reported to have heavy stocks on hand but they will not want to see them reduced without an effort at replenishment.

Actual demand from Europe should begin not long after hostilities become general—if they become general.

Germany's oil supply, in jeopardy a month ago, probably will come from Russia. A peace-time agreement with Roumania might be affected by war. Italy's position is poor with respect to oil and in a sustained war, with Roumania not neutral, Italy would be in bad shape.

However, both Italy and Germany have been storing petroleum products heavily for more than 2 years.

Italy's only controlled source of petroleum is Albania, where production is not important. Hungary, within the German sphere of influence, has one oil field.

All countries involved will be hard pressed to procure oil products in sufficient quantities for any long war, particularly high-octane aviation fuel.

It is generally understood that Germany, which is in a more difficult position than England and France, is prepared to step up the production of oil fuels through hydrogenation, but she would, of course, attempt to secure supplies from outside, including the United States, directly and indirectly. Britain and France, however, are expected to turn to this country for a large part of their needs, particularly of aviation fuel.

There has been a large increase in tanker fleets since the World War but, nevertheless, it is feared that serious difficulties may be encountered in oceanic transport. Oil is now so tremendously important for military use, with the motorization of land equipment, development of aviation and conversion of navies from coal to oil, that all belligerents with any sea power whatever would devote a considerable part of their energies to locating and taking or sinking oil-carrying vessels destined for enemy ports.

Germany is expected to devote much of her submarine power to this purpose in the war, and the democracies would probably scout over a considerable area of open sea and nearby waters from the air as well as with surface ships.

Another problem which belligerents will face is the limited productive capacity of present American plants engaged in the manufacture of aviation gasoline. There are, it is said, no exact figures available as to that capacity but, whatever it is, it would not be sufficient for wartime although, of course, it would be quickly stepped up if demand justified and no heavy restrictions were imposed upon such exports under neutrality legislation.

Expansion of facilities for the production of aviation fuel would probably be welcomed by the high military command of the Washington administration, now concerned with plans for the mobilization of industry in the event of an emergency in the United States. There is at present, in connection with general expansion programs for the army and navy, a large proposed increase in United States air forces, and while peacetime demands for fuel and oil could probably be met without difficulty, any warlike activity would require an immediate and drastic increase of supplies.

A great expansion of demand for oil from the United States and Latin America by England and France is seen by observers as a result of the probable disruption of shipping through the Mediterranean which would tend to reduce the availability of supplies from the Near East.

Little is known about current stocks of oil and its products inEurope, but despite the claims of the various governments that they have sufficient oil for a long time to come, the general opinion is that they are lower than is publicly realized. This is explained as due to the constant tension of the past 18 months or 2 years which has necessitated frequent army movements on a large scale, consuming heavy quantities of petroleum products.

Reports from Germany indicate that she has a supply sufficient for about 6 months on a peacetime footing, but how long it would last under war conditions is problematical. Whether there are any "hidden" supplies is unknown, although it is probable that the government has been accumulating supplies in anticipation of "the day." Similarly, there is little information as to the position of England and France although they, too, especially the former, have been building up supplies of food and war materials over a long period.

Observers in Washington point out that the same considerations which will make it desirable to prevent oil supplies from reaching enemy countries will make it a military necessity to put enemy refining plants and storehouses out of commission if possible. It would appear, therefore, that much of the air-raiding activities of the various belligerents will be directed to the destruction of such facilities. At the same time, this realization would make it even more essential that warring countries arrange for supplies from outside areas.

There is considerable doubt as to the advantage given Germany by her recent agreement with Roumania, making the latter's oil resources available. It is pointed out that the destruction of Germany's key hydrogenation plants would be a severe blow and render her dependent upon Roumania and, to some extent, Russia, although the latter is said to be unable to offer any great supply without expansion of her facilities.

According to Lloyd's Register, world tankage at the close of 1938 aggregated 1731 vessels with a total capacity of 11,436,880 tons. Great Britain and Ireland are credited with 435 ships of 1000 tons or more, aggregating 2,919,566 tons; Canada has 31 totaling 129,514 tons and the other British dominions and colonies have 32 totaling 215,161 tons. France has 50 tankers of 317,912 tons.

Germany has only 37 vessels of 256,093 tons, Italy 84 of 426,002 tons and Russia 28 of 132,853 tons. Japan has 47 of 429,790 tons.

Outside the immediate theatre of war, the United States leads with 421 vessels of 2,800,780 tons, followed by Norway with 272 of 2,117,381 tons and Holland with 107 of 537,564 tons.

Anti-Trust Activities

Government takes Madison case to Supreme Court. California record search halted by appeal to circuit court . . . Illinois jury resumes probe.

Madison case to Supreme Court

The Department of Justice last week carried its Madison oil case to the Supreme Court, asking for a review of the decision of the Federal Circuit Court at Chicago reversing the conviction of 12 oil companies and five officers or employees by the district court at Madison, Wisconsin.

At the same time, Socony-Vacuum Oil Company and the other defendants also filed a petition for Supreme Court review, contending that the circuit court erred "in failing to direct the trial court to enter judgments of dismissal."

Filing the petition for the government, Newman A. Townsend, acting solicitor general, told the court that the case was "one of unusual magnitude and of great public importance.

"More than three years have been devoted to its prosecution, and the trial alone consumed more than three months," he said.

"The respondents are among the largest companies in the oil industry. Their activities under attack in these proceedings covered ten states and directly affected the price of 25 percent of all of the gasoline sold in the United States." The petitions, filed August 31, will be considered by the court when it convenes for its 1939-40 session October 2.

Pacific investigation halted by appeal

Carrying an appeal to the U. S. Circuit Court in its endeavor to protest against the request for voluminous company records, Standard Oil Company of California has practically halted for the time at least the grand jury inquiry into alleged price fixing practices of the Pacific Coast petroleum industry.

Earlier in the week, U. S. District Judge Paul J. McCormick, although admitting that a hardship would be met

by major oil companies in producing countless records to aid the government, held that the companies must comply with subpoenas requesting this information.

The major group filed motions to vacate the subpoenas on the ground that the "dragnet" demand was unreasonable, oppressive and intolerable. Prosecutor Brill branded the objections as an attempt of the major companies to escape compliance, citing the main objection that it would be a hardship because of the magnitude of the documents due to the great size of the companies. He argued that if such a doctrine was accepted there would then be one law for large corporations and another for the corner drug store.

Federal grand jury in Illinois resumes oil probe

A federal grand jury reconvened at Danville, Illinois, last week to hear additional testimony of federal department of justice agents in the government's nation-wide probe of alleged monopolistic practices in the oil industry.

The Danville inquiry was launched June 6 with the announcement that there were indications that practices of major companies complained of in the Madison indictments returned three years earlier had not been "wholly abandoned." The grand jury recessed on June 23 without making a report.

Market Situation

Recent crude oil price reductions are rescinded by all purchasers . . . Removal of open market supplies during shutdown boost refined oil bids

The oil industry's market outlook was more promising, following the material improvement under the Mid-Continent oil field shutdowns.

Crude oil prices of the Mid-Continent now are generally back at the levels that prevailed prior to the reductions of mid-August, which precipitated the shutdowns.

Humble Oil & Refining Company and Sinclair Prairie Oil Marketing Company, which were leaders in posting lower prices, last week joined Shell Oil Company and other purchasers that had restored pre-shutdown postings.

The former higher prices were generally restored in advance of the lifting of the shutdowns, in the belief that the markets had been materially strengthened by the closings and that under-market selling of crude would no longer prevail in substantial proportions.

The refined product markets meanwhile have remained generally firm, and natural gasoline is expected to be in brisk demand for a considerable time, as stocks were greatly reduced during the shutdowns.

Although gasoline prices rose sharply in the first week of the shutdowns, they advanced somewhat higher last week, as refineries slowed down operations for lack of crude and made available supplies in the open market less plentiful.

Kerosene prices at the refineries also were up ⅛ cent a gallon or so last week, but fuel oil prices were mostly unchanged.

Spot orders for tanker lots of crude, gasoline and other refined products at

Shutdowns reflected in oil statistics

The latest satistics of the oil industry, covering the week ended August 26, reflected the 6-state shutdowns and the resultant slowing down of refinery operations; and the closings are due to affect the statistics similarly for the week ended September 5.

United States crude oil production was reported by the American Petroleum Institute at only 1,690,800 barrels daily in the week of August 26, down more than 2,000,000 barrels from the output in early August, and almost that amount under market demand.

Crude runs to stills were cut down 100,000 barrels to 3,475,000 barrels in the week ended August 26. They were, however, even at that level, 6.8 percent larger than in the comparable week of last year.

Gasoline stocks were reduced about 1,250,000 barrels in the week of August 26, having declined to 73,475,000 barrels. They were then 2.4 percent larger than at the corresponding time last year.

Stocks of gas oil and distillate fuels were increased approximately 700,000 barrels to 37,722,000 barrels in the week of August 26. The inventory of those heating oils is about 5 percent larger than a year ago.

Storage of residual fuel oil was expanded nearly 1,200,000 barrels to 116,237,000 barrels, but the present supply is 5.5 percent smaller than that held at this time last year.

Crude oil stocks were reduced sharply by about 5,000,000 barrels in the week ended August 19, the Bureau of Mines reported, as the Mid-Continent shutdowns got under way.

Trends of United States Production and Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1937						
August 28	[5]3,731,450	3,425,000	309,506,000	66,997,000	112,111,000	
September 25	3,666,300	[5]3,455,000	307,974,000	65,620,000	116,472,000	
1938						
March 19	3,433,550	3,080,000	306,380,000	[10]93,192,000	122,067,000	
July 30	3,316,400	3,240,000	288,514,000	76,864,000	27,573,000	116,721,000
August 27	3,388,500	3,255,000	285,029,000	71,754,000	29,747,000	117,179,000
September 24	3,251,150	3,220,000	280,278,000	68,605,000	31,183,000	119,285,000
October 29	3,237,500	3,145,000	275,824,000	67,590,000	33,690,000	120,029,000
November 12	3,243,250	3,180,000	273,394,000	[6]67,551,000	34,175,000	120,491,000
November 26	3,260,900	3,295,000	270,563,000	68,628,000	33,749,000	119,885,000
December 10	3,245,100	3,150,000	[6]269,509,000	68,587,000	32,068,000	118,711,000
December 31	3,201,450	3,115,000	273,024,000	71,695,000	29,082,000	115,741,000
1939						
January 28	3,248,250	3,235,000	271,763,000	77,279,000	26,583,000	112,766,000
February 25	3,328,850	3,185,000	271,758,000	84,597,000	23,419,000	110,252,000
March 25	3,382,350	3,225,000	273,915,000	87,561,000	21,487,000	107,551,000
April 22	3,526,700	3,280,000	277,156,000	[9]87,769,000	21,058,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	[7]25,844,000	[7]108,409,000
May 6	3,580,900	3,275,000	[2]278,607,000	86,216,000	26,167,000	108,597,000
May 20	3,438,400	3,460,000	277,068,000	84,294,000	26,389,000	109,405,000
May 27	3,585,250	3,405,000	278,289,000	84,152,000	26,992,000	109,386,000
June 10	3,376,950	3,510,000	274,692,000	82,716,000	29,357,000	111,239,000
June 24	3,452,800	3,430,000	272,297,000	81,733,000	30,239,000	111,726,000
July 1	3,463,000	3,480,000	271,567,000	81,102,000	31,230,000	113,388,000
July 8	3,529,800	3,420,000	269,348,000	80,823,000	32,435,000	113,494,000
July 15	3,529,700	3,390,000	268,199,000	79,416,000	33,673,000	114,075,000
July 22	3,583,750	3,395,000	268,447,000	77,960,000	34,366,000	114,035,000
July 29	3,539,100	3,460,000	268,513,000	77,887,000	34,900,000	114,053,000
August 5	[3]3,909,400	3,445,000	268,982,000	76,431,000	35,601,000	114,512,000
August 12	3,550,100	3,460,000	[3]267,536,000	75,859,000	36,239,000	114,309,000
August 19	2,480,550	[3]3,575,000	262,486,000	74,738,000	37,013,000	115,069,000
August 26, 1939	[10]1,690,800	3,475,000	.....	73,475,000	37,722,000	116,237,000
August 27, 1938	3,388,500	3,255,000	[4]285,137,000	71,754,000	[8]	[9]
Change in past year	—50%	+6.8%	—8.0%	+2.4%	+5.1%	—5.5%

[1] All time peak. [2] Peak for 1939. [3] Lowest for 16½ years. [4] Stocks, August 20, 1938.
[5] Peak prior to 1939. [6] Lowest for year.
[7] Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California.
[8] Available data for year ago include only stocks at refineries, and not at terminals, in transit, etc., except in California. Those stocks on August 26, 1938 totaled 28,483,000 barrels, and comparable stocks on August 26, 1939, totaled 29,934,000 barrels, or 5.1% more.
[9] Available data for year ago include only stocks at refineries, and not at terminals, in transit, etc., except in California. Those stocks on August 26, 1938, totaled 117,845,000 barrels, and comparable stocks on August 26, 1939, totaled 111,340,000 barrels, or 5.5% less.
[10] Lowest since October, 1922.

CRUDE OIL PRICE SCHEDULES

MID-CONTINENT GRAVITY SCALE PRICES

(Posted October 11-13, 1938)

(Some fields of Mid-Continent have flat price postings, and are shown separately)

GRAVITY	[7]Okla.-Kans.	North La.-Ark.	North & W. Central Tex.	East Central Tex.	Gray Co. Tex.	Carson, Hutchinson Co. Tex.	[1]Tomball Tex. Type	West Tex.-N. Mex.	[2]Gulf Coast (Tex.-La.)	[3]Some La. Gulf Areas	Jennings, La.	[4]Anahuac, Tex. Type	[5]Refugio, Tex. Type	[6]Mirando, Tex. Type	[8]Salt Creek, Wyo.
17–17.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18–18.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19–19.9	.....	.....	.....	.....	.....	.....	.....	*$0.53	*$0.79	*$0.79	.....	*$0.74	*$0.79	*$0.74	.....
20–20.9	$0.60	.....	.....	.....	.....	.....	.....	.55	.82	.82	.....	.77	.82	.77	.....
21–21.9	.63	.....	.....	.....	.....	.....	.....	.57	.85	.85	.....	.80	.85	.80	.....
22–22.9	.66	.....	.....	.....	.....	.....	*$0.95	.59	.88	.88	.....	.83	.88	.83	.....
23–23.9	.69	.....	.....	*$0.78	.....	.....	.97	.61	.91	.91	.....	.86	.91	.86	.....
24–24.9	.72	*$0.73	*$0.71	.80	.....	.....	.99	.63	.94	.94	.....	.89	.94	.89	.....
25–25.9	.75	.75	.73	.82	.....	.....	1.01	.65	.97	.97	.....	.92	.97	.92	.....
26–26.9	.78	.77	.75	.84	.....	.....	1.03	.67	1.00	1.00	.....	.95	1.00	.95	.....
27–27.9	.81	.79	.77	.86	.....	.....	1.05	.69	1.02	1.02	.....	.97	1.02	.97	.....
28–28.9	.84	.81	.79	.88	*$0.72	*$0.67	1.07	.71	1.04	1.04	.....	.99	1.04	.99	*$0.86
29–29.9	.87	.83	.81	.90	.74	.69	1.09	.73	1.06	1.06	.....	1.01	1.06	1.01	.88
30–30.9	.90	.85	.83	.92	.76	.71	1.11	.75	1.08	1.08	.....	1.03	1.08	1.03	.90
31–31.9	.92	.87	.85	.94	.78	.73	1.13	.77	1.10	1.10	*$0.87	1.05	1.10	1.05	.92
32–32.9	.94	.89	.87	.96	.80	.75	1.15	.79	1.12	1.12	.89	1.07	1.12	1.07	.94
33–33.9	.96	.91	.89	.98	.82	.77	1.17	.81	1.14	1.14	.91	1.09	1.14	1.09	.96
34–34.9	.98	.93	.91	1.00	.84	.79	1.19	.83	1.16	†1.16	.93	1.11	1.16	1.11	.98
35–35.9	1.00	.95	.93	1.02	.86	.81	1.21	.85	1.18	.....	.95	1.13	1.18	1.13	1.00
36–36.9	1.02	.97	.95	1.04	.88	.83	1.23	.87	1.20	.....	.97	1.15	1.20	1.15	1.02
37–37.9	1.04	.99	.97	1.06	.90	.85	1.25	.89	1.22	.....	.99	1.17	1.22	1.17	1.04
38–38.9	1.06	1.01	.99	1.08	.92	.87	1.27	.91	1.24	.....	1.01	1.19	1.24	1.19	1.06
39–39.9	1.08	1.03	1.01	1.10	.94	.89	1.29	.93	1.26	.....	1.03	1.21	1.26	1.21	1.08
40 and above	1.10	1.05	1.03	1.12	.96	.91	1.31	.95	1.28	.....	1.05	1.23	1.28	1.23	1.10

* Minimum price and applies also to purchases of lower gravity.

† Maximum price and applies also to purchases of higher gravity.

[1] Tomball, Raccoon Bend (Deep Sand) and Satsuma.

[2] Includes Cotton Lake, Goose Creek, Sugarland, West Columbia, Thompsons, Mykawa, Nome, Amelia, Webster, and Clear Lake fields.

[3] Includes Berwick Bay, Bay St. Elaine, Caillou Island, Chacahoula, Dog Lake, Four Isle, Gillis, Hackberry, Horseshoe Bayou, Iberia, Jefferson Island, Lake Barre, Lake Pelto, Leesville, Port Barre, and Vinton fields.

[4] Anahuac, Dickinson, Gillock, Cedar Point, Fairbanks, Turtle Bay, Hull, Liberty, Orange, Pierce Junction, Barbers Hill and Raccoon Bend (shallow sand) fields.

[5] Includes Saxet, Greta, O'Connor-McFadden, Taft, Plymouth and Tom O'Connor fields.

[6] Includes Duval, Jim Hogg, Jim Wells, Webb and Zapata counties, Texas, and Heyser and Placedo fields.

[7] Oklahoma Pipe Line (Carter Oil) and Magnolia schedules.

[8] Includes La Barge, Midway Dome, Dutton Creek.

Mid-Continent Flat Prices

	Flat Price	Date Posted
Arkansas:		
Smackover	$0.73	10–12–38
Louisiana:		
Garden Island	1.24	10–12–38
Gibson	1.04	10–11–38
Lafitte	1.04	10–12–38
Texas:		
East Texas	1.10	10–12–38
Talco	.55	10–12–38
Livingston, Cleveland	1.10	10–12–38
Van	.93	10–12–38
Pettus	1.29	10–12–38
Pecos County	.78	10–12–38
Pecos Shallow	.65	10–12–38
Luling	.87	10–12–38
Lytton Springs	.99	10–12–38
Salt Flat, Darst Creek, Hilbig, Carroll, Clark and Zoboroski	.96	10–11–38
Flour Bluff	1.27	10–11–38
Guerra	1.06½	5– 8–39
Seabreeze, Willow Slough, La Belle, Hardin	1.00	10–13–38
Clay Creek	.85	10–13–38
Conroe	1.27	10–11–38
Cayuga	.68	2–16–39
Long Lake	1.08	10–19–38

Middle West Prices

Lima, Ohio	$0.90	10–13–38
Illinois	.95	6– 8–39
Illinois Basin	1.05	6– 8–39
Centralia, Illinois	.85	8–16–39
Princeton, Indiana	.95	6– 8–39
Western Kentucky	1.00	6– 8–39
Birk City, Western Kentucky	.90	6– 8–39
Kentucky River, Eastern Kentucky	1.10	6– 9–39
Big Sandy River, Eastern Kentucky	1.02	6– 9–39

Michigan Prices

	Flat Price	Date Posted
Porter, Greendale, Crystal	$0.97½	4–20–39
Buckeye, Bentley, Edenville and Beaverton	.95	4–20–39
Freeman	.89	4–20–39
Bloomingdale (Van Buren Co.)	.83	7–19–39
West Branch-Arenac-Ogemaw	.70	12–19–38
Allegan-Kent Counties	.88	4–17–39

Rocky Mountain States Prices

Colorado:		
Canon City, Ft. Collins, Wellington, Moffat and Florence	.90	10–11–38
Iles, Light	.98	10–11–38
Iles, Heavy	.92	10–11–38
Montana:		
Cat Creek—Cut Bank	1.10	10–11–38
Sunburst	.90	11–16–37
Dry Creek	.92	10–11–38
New Mexico:		
Artesia	.77	10–11–38
Hogback	1.00	10–11–38
Wyoming:		
Big Muddy	.98	10–11–38
Byron	.55	10–11–38
Elk Basin	.90	10–11–38
Frannie, Light	.55	10–11–38
Frannie, Heavy	.42	10–11–38
Garland	.50	10–11–38
Grass Creek, Light	.90	10–11–38
Grass Creek, Heavy	.40	10–11–38
Hamilton Dome	.35	10–11–38
Lance Creek	.77	10–11–38
Mill Creek	.72	10–11–38
Oregon Basin	.50	10–11–38
Osage	1.30	10–11–38
Poison Spider	.59	10–11–38
Rock Creek	1.00	10–11–38
Tensleep	.646	10–11–38

Pennsylvania Prices

	Flat Price	Date Posted
Bradford Allegheny	$2.00	3– 6–39
National Transit Lines	2.00	3– 6–39
Sw. Pa. Pipe Line	1.65	3– 6–39
Eureka Pipe Line	1.59	3– 6–39
Buckeye Pipe Line	1.55	3– 6–39
Corning Grade, Ohio	1.02	1–24–39

Major Price Changes

	Penna. (Nat. Tr.)	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
June 19, 1933	Up 10	Up 19	.....
June 26, 1933	Up 10	.....	Up 9-12
July 6, 1933	Up 13	Up 10	.....
July 17, 1933	Up 15	.....	.....
July 28, 1933	Up 15	.....	.....
Aug. 11, 1933	Up 10	.....	.....
Aug. 24, 1933	.....	Up 10	.....
Aug. 30, 1933	Up 15	.....	.....
Sept. 6, 1933	Up 10	Up 10	Up 15
Sept. 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
Nov. 6, 1934	Cut 25	.....	.....
Dec. 6, 1934	Cut 25	.....	.....
Jan. 4, 1935	Up 15	.....	.....
Feb. 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
Aug. 29, 1935	.....	.....	Cut *1
Sept. 6, 1935	Up 5	.....	.....
Oct. 29, 1935	Up 15	.....	.....
Nov. 1, 1935	.....	.....	Up *28
Nov. 18, 1935	Up 15	.....	.....
Dec. 6, 1935	.....	.....	Up *9
Jan. 9, 1936	.....	Up 10	.....
Jan. 13, 1936	Up 15	.....	.....
Feb. 26, 1936	.....	.....	Up †5
Dec. 28, 1936	Up 12	.....	.....
Jan. 28, 1937	.....	Up 12	.....
Feb. 24, 1937	Up 10	.....	.....
June 7, 1937	Up 15	.....	.....
Sept. 1, 1937	Cut 22	.....	.....
Oct. 12, 1937	Cut 25	.....	.....
Dec. 1, 1937	Cut 15	.....	.....
March 7, 1938	Cut 17	.....	.....
June 13, 1938	Cut 25	.....	.....
Sept. 1, 1938	Cut 12	.....	.....
Oct. 11, 1938	.....	Cut 20	.....
Jan. 21, 1939	Up 12	.....	.....
Feb. 2, 1939	Up 8	.....	.....
March 6, 1939	Up 12	.....	.....

* Signal Hill 26 gravity.

† Seal Beach 26 gravity.

Crude Production Taxes

Oklahoma—Five percent of gross value less royalty interests.
Texas—2¾ cents or 2¾ percent, whichever is higher.
Louisiana—From four to 11 cents a barrel, depending upon gravity.
Arkansas—2.6 percent of gross market value.
Montana—Two percent of gross value at well and 3/8 of 1c per barrel.
New Mexico—Severance tax of 2 percent on oil and gas.
Wyoming and New Mexico—Production tax based upon state and county assessments.
California—.66443 mills per barrel of oil produced and 17.39 cents an acre on proved lands.

Gulf Coast refining centers were abundant late last week, but purchases were generally for domestic use by interests that were caught short by the 6-state shutdown order. The dearth of export business caused considerable comment in trading circles. Both factions in the current European crisis apparently are not willing to risk the loss of cargoes on the high seas for the time being.

Crude Prices on Trial

Humble Oil & Refining Company, regarded as the leader in determining crude price levels in Texas, on August 29 restored its former price schedule, retroactive to August 11, the date on which lower postings had been instituted. In effect, therefore, the lower Humble prices were never applied to purchases.

H. C. Wiess, president, in announcing the restoration of former postings by Humble Oil & Refining Company, warned however that the restored prices could not be maintained unless the markets proved comparatively free of under-market selling of crude. Following is the Wiess statement:

"Humble Oil & Refining Company has today posted its price bulletin No. 186, effective 7:00 a.m. August 11, 1939, restoring the prices in effect prior to its price adjustment of that date. This is being done in view of changes in conditions that have occurred since August 11 and in the belief that, following the expiration of the shutdowns and the resumption of normal production of crude, the cut prices in effect prior to our August 11 adjustment will no longer prevail and that orderly production under conservation methods will obtain. If any considerable amount of crude continues to be sold at prices lower than those which we are now posting the lower prices will naturally establish the market and readjustment of our prices must inevitably follow, as we can not continue to pay more for crude than others are paying. Prices are always subject to change from time to time in accordance with conditions at the time."

Shell Leads Back Up

First of the major companies to restore former postings was Shell Oil Company, which stated that the statistical position of the industry already had improved and was expected to improve sufficiently by the end of the shutdown period to justify the higher prices.

Other companies which followed Sinclair and Humble down but which subsequently restored the higher postings included Skelly Oil Company, Barnsdall Pipe Line Company, Stanolind Crude Oil Purchasing Company, Atlantic Refining Company, Cities Service Oil Company, Tide Water Associated Oil Company, and others. Standard Oil Company of Louisiana, effective August 30, advanced its crude prices for Louisiana and Arkansas fields back to the levels that existed before reductions of August 14.

East Texas on Gravity Basis

The adoption of gravity scale prices in the East Texas field gained additional support when the Cities Service Oil Company revised its postings effective August 30 to $1.10 per barrel for 39 gravity and above, with a minimum of 98 cents for oil testing below 34 gravity. A flat price was used by purchasers from June 20, 1931, until Shell Oil Company, Inc., revised its postings last August 11, using the above scale with a 20-cent reduction. The latter has since boosted its quotation to $1.10 for 39 gravity and above.

East Texas crude averages 39 gravity, corrected, from wells that are immune from salt water. Wells that produce water yield from 1 to 3 degrees below normal gravity crude due to the evaporation of the light ends while treating the fluid. The volume of treated oil has reached such proportions that crude purchasers have contemplated the use of the gravity scale posting for some months. The price penalty is expected to induce property owners to utilize more efficient methods in treating their cut oil.

Gasoline Prices

U. S. motor gasoline at Oklahoma refineries ranged last week about as follows: 62 octane and below, 4½ to 4¾ cents a gallon; 63 to 66 octane, 4¾ to 5⅛ cents; 67 to 69 octane, 4¾ to 5¼ cents; 70 to 72 octane, 5¼ to 5½ cents.

Corresponding prices in the Chicago market were: 4½ to 4¾ cents, 4½ to 5 cents, 4¾ to 5⅛ cents, and 4⅞ to 5⅜ cents.

In East Texas limited quantities of 60-62, 400 end point gasoline were offered around 4½ cents a gallon, as

CALIFORNIA CRUDE OIL PRICES

(Posted February 26, 1936; except El Segundo and Wilmington, posted October 15, 1937; Greeley and Canal posted July, 1938 and Montebello, posted August 11, 1939). All gravity above those quoted take highest prices of that field.

Gravity	Alamitos Heights	El Segundo and Signal Hill	Seal Beach	Huntington Beach	Inglewood	Playa Del Rey	Olinda Brea Canyon	Athens Rosecrans	Torrance	Richfield	Whittier East Coyote La Habra	Montebello	West Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River Round Mt. Kern Front	Greeley Canal	Mountain View	Midway-Sunset Lakeview Buena Vista Hills Elk Hills	Lost Hills	Coalinga	Wheeler Ridge	Wilmington
14-14.9	$0.74	$0.80	$0.79	$0.78	$0.79	$0.80	$0.76	.....	$0.80	$0.76	$0.76	$0.77	$0.78	.....	$0.70	....	....	$0.70	$0.70	$0.70	....	$0.75
15-15.9	.74	.80	.79	.78	.79	.80	.76	.....	.80	.76	.76	.77	.78	.....	.70	....	....	.70	.70	.70	....	.75
16-16.9	.74	.80	.79	.78	.79	.80	.76	.....	.80	.76	.76	.77	.78	.....	.70	....	....	.70	.70	.70	....	.75
17-17.9	.74	.80	.79	.78	.81	.80	.76	.....	.80	.76	.76	.77	.78	.....	.70	....	....	.70	.70	.70	....	.77
18-18.9	.74	.80	.79	.78	.84	.80	.78	.....	.82	.76	.76	.77	.78	.....	.70	....	....	.70	.70	.70	....	.79
19-19.9	.74	.82	.79	.82	.87	.84	.81	.....	.85	.76	.78	.77	.78	.....	.70	....	$0.70	.74	.74	.71	$0.70	.82
20-20.9	.74	.85	.79	.85	.90	.88	.84	.....	.88	.78	.82	.77	.80	.....	....	....	.70	.78	.78	.72	.70	.85
21-21.9	.74	.88	.79	.89	.93	.93	.88	.....	.91	.80	.85	.77	.84	$0.78	Dominguez	....	.73	.82	.82	.74	.70	.88
22-22.9	.74	.92	.82	.92	.96	.98	.92	.....	.93	.84	.89	.79	.88	.78	....	....	.77	.87	.86	.78	.72	.92
23-23.9	.77	.95	.86	.96	.99	1.02	.96	$0.84	.96	.88	.93	.82	.92	.78	.79	....	.80	.92	.90	.82	.76	.95
24-24.9	.80	.99	.91	1.00	1.02	1.06	.99	.88	.99	.91	.96	.85	.96	.82	.81	....	.84	.97	.94	.86	.79	.99
25-25.9	.82	1.03	.95	1.03	1.05	1.11	1.03	.93	1.02	.95	.....	.89	.99	.86	.83	....	.88	1.01	.98	.90	.83	1.03
26-26.9	.85	1.06	1.00	1.07	1.09	1.16	1.06	.98	1.05	.98	.....	.93	1.03	.90	.86	....	.91	1.06	1.02	....	....	1.06
27-27.9	.88	1.10	1.05	1.11	1.12	.....	1.10	1.03	....	1.02	.....	.97	1.06	.95	.88	$0.91	.95	1.10	1.06	....	....	1.10
28-28.9	.90	1.14	1.10	1.14	1.15	.....	1.14	1.07	....	1.06	.....	1.01	1.10	.99	.90	.94	.99	1.15	1.10	....	....	1.14
29-29.9	.93	1.17	1.15	1.18	1.18	F.O.B.	1.17	1.12	....	1.09	.....	1.06	1.14	1.03	.93	.98	1.02	1.20	1.14	....	....	1.17
30-30.9	.95	1.21	1.19	1.22	1.21	Pipe	1.21	1.17	....	....	.....	1.10	1.17	1.08	.95	1.02	1.06	1.25	1.18	....	....	1.21
31-31.9	....	....	....	....	1.24	Line	1.24	1.22	Kettleman Hills			1.14	1.21	1.12	.97	1.06	1.09	1.29	....	....	....	....
32-32.9	....	....	....	....	1.27	.....	1.27	1.27				1.18	1.25	1.16	1.00	1.09	1.13	1.34	....	....	....	....
33-33.9	....	....	....	....	....	.....	....	1.32	1.19			1.22	1.28	1.20	1.28	1.13	1.17	1.38	....	....	....	....
34-34.9	....	....	....	....	....	....	....	1.37	....	1.23	.....	1.26	1.32	1.25	1.32	1.17	1.20	....	....	....	....	....
35-35.9	....	....	....	....	....	....	....	1.42	....	1.27	.....	1.30	....	1.29	1.35	1.20	....	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	1.46	....	1.31	.....	1.34	....	1.33	1.39	1.24	....	....	....	....	....	....
37-37.9	....	....	....	....	....	....	....	1.51	....	1.35	.....	1.38	....	1.37	1.43	1.28	....	....	....	....	....	....
38-38.9	....	....	....	....	....	....	....	1.56	....	1.39	.....	1.42	....	1.42	....	1.31	....	....	....	....	....	....
39-39.9	....	....	....	....	....	....	....	1.61	....	1.43	.....	1.47	....	.....	Elwood Terrace	1.35	....	....	....	....	....	....
40-40.9	....	....	....	....	....	....	....	1.66	....	....	.....	1.51	....	.....	F.O.B.	1.39	....	....	....	....	....	....
41-41.9	....	....	....	....	....	....	....	....	....	....	.....	1.55	....	.....	Ship	1.43	....	....	....	....	....	....
42-42.9	....	....	....	....	....	....	....	....	....	....	.....	1.59	....	.....	....	1.46	....	....	....	....	....	....
43-43.9	....	....	....	....	....	....	....	....	....	....	.....	1.63	....	.....	....	1.50	....	....	....	....	....	....
44-44.9	....	....	....	....	....	....	....	....	....	....	.....	1.67	....	.....	....	1.54	....	....	....	....	....	....
45-45.9	....	....	....	....	....	....	....	....	....	....	.....	1.71	....	.....	....	1.57	....	....	....	....	....	....
46-46.9	....	....	....	....	....	....	....	....	....	....	.....	1.75	....	.....	....	1.61	....	....	....	....	....	....
47-47.9	....	....	....	....	....	....	....	....	....	....	.....	.....	....	.....	....	1.65	....	....	....	....	....	....
48-48.9	....	....	....	....	....	....	....	....	....	....	.....	.....	....	.....	....	1.68	....	....	....	....	....	....

compared with the generally prevailing price of 4¼ cents prior to the Mid-Continent shutdowns.

Having advanced a full cent since the commencement of the shutdowns, natural gasoline, grade 26-70, was selling in the Mid-Continent markets f.o.b. refineries at 4 cents a gallon, and sales were reported at the same price f.o.b. Breckenridge, Texas.

Kerosene Prices

Kerosene prices f.o.b. Oklahoma refineries ranged from 3½ to 4¼ cents a gallon for the 41-43 water white grade, and from 3⅝ to 4⅝ cents for the 42-44 water white grade; and corresponding prices in the Chicago market were 3⅜ to 4 cents and 3½ to 4¼ cents.

In the Chicago market range oil was priced from 3⅜ to 3⅞ cents a gallon. The No. 1 white oil was priced from 3¼ to 3¾ cents, and No. 1 straw from 3 to 3¼ cents. No. 2 straw was 3⅛ to 3¼ cents. No. 3 oil was 2¾ to 3⅛ cents. No. 5 oils were 65 cents a barrel. The No. 6 oil was quoted at 35 to 45 cents.

Wichita.—Kansas completed 21 wells for a total initial potential of 64,591 barrels per day. Of the 30 completions, 8 were dry holes and 1 location was abandoned. Twenty-five starts were made during the seven days. Cowley County reported 6, Rice 5, Johnson 4, Ellis 3, Barton 2, Marion, McPherson, Saline, Stevens and Woodson 1 each.

Crude Production

Daily output up 796,300 barrels as Mid-Continent emerges from shutdown; level still below demand.

PRODUCTION of crude oil in the United States during the week ended September 2 was at an average rate of 2,219,150 barrels. As Mid-Continent states emerged from the shutdown, output gained 796,300 barrels on the preceding week's low level. Texas, enjoying normal operation in the latter half of the week, and Louisiana, also opening up at mid-week, brought the output level to within 1,302,750 barrels of the estimate of demand for domestic crude made by the Bureau of Mines.

Texas produced 864,800 barrels daily; up 696,450 barrels from the week before but 563,300 barrels below the federal prediction.

California yield slacked to 600,300 barrels daily, off 12,400 barrels daily from the previous period. The self-imposed allowable figure was over-run by 2000 barrels; the government recommendation by 5200 barrels.

Oklahoma, late in releasing the rein, produced only 6100 barrels daily, slightly more than the negligible production of the preceding week.

Illinois produced 316,050 barrels as new outlets were placed in service. At this level output was 7300 barrels greater than that of the previous week and 114,150 barrels over bureau recommendation.

Kansas produced only a dribble, 3975 barrels daily, as the restriction remained in effect through the week. Production for the week before was also negligible.

Michigan and Arkansas production figures reflected participation in the shut-in, the former producing 50,250 barrels under reduced allowable, and the later 31,075 barrels daily, or less than half of normal output.

H. W. DODGE, vice president of The Texas Company, New York, arrived in Calgary, Alberta, Canada, last week from Great Falls, Montana, while on a tour of western properties of the company. Traveling by air, Dodge was accompanied by Aubrey Kief, manager of the aviation sales division of the company.

United States Crude Oil Production

Estimates Compiled by THE OIL WEEKLY

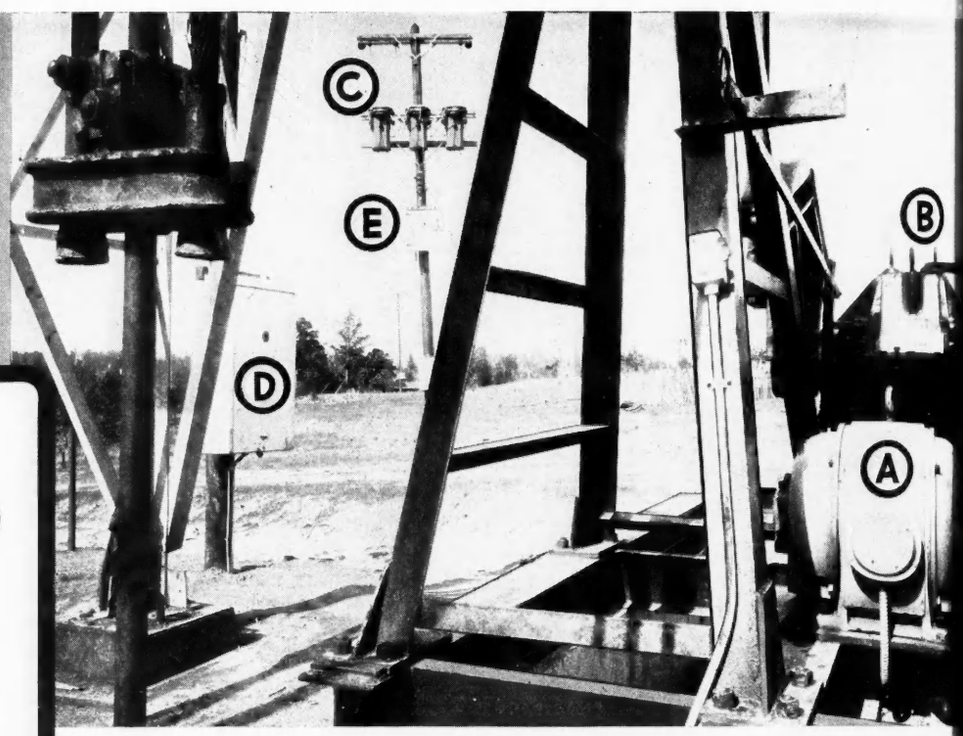
DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (August)	State Allowable in Aug.	BARRELS DAILY FOR WEEK ENDED Sept. 2	Aug. 26
TEXAS—				
Texas Panhandle	.....	.....	54,450	7,300
North Texas	.....	.....	51,850	14,500
West Central Texas	.....	.....	15,500	4,450
West Texas	.....	.....	155,000	18,000
East Central Texas	.....	.....	64,000	4,050
East Texas Field	.....	.....	235,700	10,500
South Texas	.....	.....	140,250	27,200
Texas Gulf Coast	.....	.....	148,050	82,250
Total Texas	1,428,100	1,393,225*	864,800	168,250
CALIFORNIA—				
Long Beach	.....	.....	56,100	46,200
Santa Fe Springs	.....	.....	27,100	27,100
Huntington Beach	.....	.....	26,200	25,600
Dominguez	.....	.....	17,800	18,800
Ventura Avenue	.....	.....	36,100	34,500
Midway-Sunset	.....	.....	46,100	52,700
Kettleman Hills	.....	.....	52,400	54,000
Wilmington	.....	.....	86,400	85,700
Others	.....	.....	252,100	268,100
Total California	595,100	598,300†	600,300	612,700
OKLAHOMA—				
Oklahoma City	.....	.....	1,150	.....
Seminole Area	.....	.....	1,720	.....
Fitts	.....	.....	370	.....
Others	.....	.....	2,860	.....
Total Oklahoma	448,100	428,000	6,100	.....
LOUISIANA—				
North Louisiana	.....	.....	38,900	28,350
South Louisiana	.....	.....	117,500	25,850
Total Louisiana	259,300	241,602	156,400	54,200

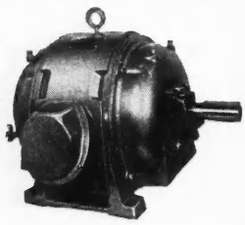
DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (August)	State Allowable in Aug.	BARRELS DAILY FOR WEEK ENDED Sept. 2	Aug. 26
ILLINOIS—				
New Pools	.....	.....	308,250	301,050
Old Pools	.....	.....	7,800	7,700
Total Illinois	201,900	.....	316,050	308,750
KANSAS—				
Burrton-Haven	.....	.....	425	.....
Russell County	.....	.....	925	.....
Silica	.....	.....	25	.....
Others	.....	.....	2,600	.....
Total Kansas	168,700	164,000	3,975	.....
NEW MEXICO	111,000	111,000	5,950	1,550
EASTERN STATES				
Pennsylvania Grade	.....	.....	74,850	74,250
Others, Eastern	.....	.....	22,250	22,200
Total Eastern States	.....	.....	97,100	96,450
MOUNTAIN STATES—				
Wyoming	77,100	.....	66,300	69,950
Montana	16,400	.....	16,650	17,000
Colorado	3,900	.....	4,000	3,950
Total Mountain States	97,400	.....	86,950	90,900
MICHIGAN	54,200	.....	50,250	60,250
ARKANSAS	51,900	64,991	31,075	29,800
Total United States	3,521,900	.....	2,219,150	1,422,850

* Daily average, considering Saturday and Sunday shutdowns, water exemptions and exemption at Rodessa.
† Recommendation of Central Committee of California Oil Producers' Association.

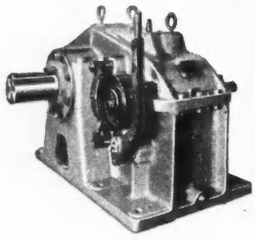
5 BIG BENEFITS
FROM PUMPING ELECTRICALLY

Pumping rigs completely equipped with Westinghouse drives, like the one illustrated, are delivering day-in-and-day-out performance in every oil field. They stand up and take it under most severe weather conditions.

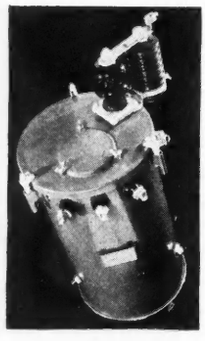




(A) 15 HP SPLASH-PROOF MOTOR—electrical parts protected against splashing liquids and moisture. Especially suitable for outdoor installations.



(B) OIL PUMPING UNIT—double reduction oil pumping speed reducer with double extended slow speed shaft for single or twin-crank pumping.



(C) 3-10KV-A CSP TRANSFORMERS—completely self-protected against lightning, service interruptions from fuse outages, and burnouts from short circuits and overloads.

(D) 15 HP WEATHERPROOF CONTROL.

(E) POLE MOUNTED CAPACITOR—for power factor correction.

Electrically driven equipment for oil well pumping, when powered by Westinghouse, offers these important advantages:

1. Simplified operation through automatic starting, pumping and stopping.
2. Less down time and lower service costs by elimination of winter freezing and starting troubles.
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4. Lower investment and installation charges, elimination of buildings, fuel service and water cooling tanks.
5. Low depreciation and maintenance on Westinghouse weatherproof electrical equipment.

Obtain these benefits by using Westinghouse electric drives for your next pumping installation. Our local office will give you complete data — and expert "back-up" support is available at headquarters when needed. Westinghouse Electric & Manufacturing Company, East Pittsburgh, Penna.

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WEEK'S DRILLING HIGHLIGHTS

Mississippi

First commercial oil production in Mississippi was indicated by a drill-stem test of a wildcat in Yazoo County. Preparations are being made for an early gauge.

Rocky Mountains

Showing 45 barrels hourly on a drill-stem test, the second well drilled at Wilson Creek, Colorado, indicates the discovery of a year ago extends at least one mile. The new well is being carried deeper before completion.

New Mexico

Lovington pool, Lea County, is off for an extended drilling campaign as a western extension is the key well which will force progressive offsets inside an area which has been indicated 2 miles long and 1¼ miles wide.

Arkansas

The fifth Permian oil field in Columbia County was opened at 9002 feet, flowing 22 barrels per hour. Buckner production was extended a mile east. Pressures in most fields of the state were boosted by the production holiday.

Oklahoma

Earlsboro production was extended northeast by a well making 100 barrels per hour after acid treatment through perforations at 4374-4416 feet, but a try to the northwest was a failure, as was a try to widen production at Shawnee in Pottawatomie County. Field work is getting back to normal following the production holiday.

Kansas

Cowley County apparently has production at a new level in an outpost test. Luka pool in Pratt County and Silica in Rice County, apparently have been extended.

Illinois

Mill Shoals in White County gives indications of another town-lot campaign being developed, while Keensburg in Wabash County grows in importance as an inside test finds a thicker section of Cypress sand. Three new counties entered the list during the week when 17 wildcats were started.

Kentucky

A well in Hancock County was abandoned after efforts to cut off the water coming with a slight amount of oil were unavailing.

Michigan

Michigan's fifth wildcat oil strike for the year is not expected to cause undue excitement, as the well in Zeeland Township of Ottawa County pumped only 25 barrels per day the first two days after being treated with acid.

West Texas

The second Ellenberger lime test in the Apco pool in Pecos County has sufficient porosity to warrant setting casing for a test. Cedar Lane's discovery is testing on gas lift while waiting for a dose of acid which is hoped will make it flow. All active fields in the area have a number of wells in completing stage following the production shutdown which halted them for two weeks.

North Texas

Production test given the second lower Strawn well in the Bonita pool of eastern Montague County, reveals it of such proportions as will encourage more development. In the Nocona pool a flow of 150 barrels in three hours gives the Upper Strawn an importance. Western Clay County recorded its third Strawn discovery for the current year.

Southwest Texas

Important production was indicated in a test at LaGloria in Jim Wells County, while at Ben Bolt in the same county a second sand was being opened. Angelita and East Plymouth also had new sands.

Comparison of Permits Granted for New Wells

STATE	Week Ending Sept. 2	Total this Mo.	Total this Year	Total this Date Last Year	1938 Year Total
Arkansas	2	2	157	168	247
California	22	22	700	842	1,146
Louisiana	44	44	902	904	1,214
Kansas	25	25	1,030	1,078	1,453
Michigan	36	36	952	569	953
N. Mexico	* 8	8	.....	.....	.....
Oklahoma	23	23	1,393	1,386	1,978
Texas	121	121	7,058	9,014	12,369
Total	281	281	12,246	13,961	19,360

* Data for New Mexico prior to August not available.

Summary of Wells Completed in the United States Week Ending September 2, 1939

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total 1939	Total this Date 1938
Alabama	....	....	....	....	.....	....	2
Arizona	....	....	....	....	.....	....	....
Arkansas	7	6	1	....	2,359	166	154
California	19	19	....	....	15,795	712	869
Colorado	....	....	....	....	.....	15	5
Florida	....	....	....	....	.....	....	....
Georgia	....	....	....	....	.....	1	1
Illinois	74*	49*	....	25	38,657	2,548*	924*
Indiana	13	11	....	2	4,922	125	79
Kansas	29*	21*	....	8	64,591	935*	1,163*
Kentucky	19	7	2	10	612	445	516
Louisiana	17	9	....	8	1,673	698	752
Michigan	31	19	1	11	7,150	966	595
Mississippi	....	....	....	....	.....	7	11
Montana	7	3	4	....	320	99	47
Nebraska	....	....	....	....	.....	1	1
New Mexico	9	8	....	1	2,951	420	361
New York	19	17	....	2	72	392	486
North Dakota	....	....	....	....	.....	....	....
Ohio	22*	8*	8	6	76	616*	643
Oklahoma	39	22	3	14	2,401	1,409	1,469
Pennsylvania	41	37	3	1	49	1,071	1,558
South Dakota	....	....	....	....	.....	....	....
Tennessee	....	....	....	....	.....	....	2
Texas	97	56	1	40	26,662	6,568	8,831
Utah	....	....	....	....	.....	....	2
West Virginia	11	1	9	1	2	354	473
Wyoming	3	3	....	....	4,678	94	74
Total this week	457	296	32	129	172,970	17,630	18,917
Total last week	483	345	23	115	335,142	17,173	18,414
Total this year	17,630	12,017	1,243	4,370	12,903,280	.....	.....

* Includes water-input wells.

Oklahoma Fields

Earlsboro extended northeast by 100-barrels-hour well. Extension try for Shawnee in Pottawatomie if failure.

Tulsa.—Field activity was beginning to take hold in Oklahoma with the wells opened following the two-week shut-in period. Earlsboro pool, Pottawatomie County, was extended northwestward as George Pace brought in Hale 1, C SW NE 331-10n-5e, flowing more than 100 barrels per hour from Viola lime. Drilled to 4485 feet in Wilcox, hole was plugged back and casing perforated at 4374-4416 feet. In 6 hours 2000 feet of fluid filled the casing. After acidizing with 2000 gallons the well flowed 45 barrels the first hour and increased to 100 barrels regularly per hour.

Northeast of the pool, Kerr-Lynn Oil Company's Raney 1, SW NE NE 35-10n-5e, drilled 20 feet in Wilcox sand topped at 4210 feet and on initial swabbing test made 3 barrels of oil per hour. Shawnee pool, Pottawatomie County, had an outpost failure as Yorkan Production Company's Bewley 1, NEc 26-11n-3e, 2 miles west of the pool, was abandoned in dry Wilcox sand at 5805 feet. South and west of the pool, one test is nearing completion and another rigging up to drill. J. F. Smith et al's Carrol 1, 5-10n-4e, set 7-inch pipe at 4380 feet prior to drilling plugs with standard tools. West of production Yorkan Production Company's Rhodes 1, NE SE NE 6-10n-4e, set surface string. Southwest of Konawa 2 extension tests have been staked. Farmers Mutual Royalty Company has pits completed at Fidler 1, SEc 4-5n-5e, and Culver and Shepherd et al's Fidler 1, NEc 9-5n-5e, was moving in materials.

Three quarters mile northeast of Culver and Shepherd's Hunton lime discovery near Konawa, Ellison et al's Hyde 1, NEc 3-5n-5e, topped the lime at 2690 feet and drilled through Wilcox sand to 3312 feet. Plugging back to 2710 feet and acidizing at 2710-58 feet, the test rated 25 barrels daily. Fish pool, Seminole County, seemed assured of another Dolomite producer as The Texas Company's Eliza 4, SW NW SE 19-7n-8e, had more than 400 feet of oil in the hole at 4109 feet.

Two miles east of Eagle Oil Company's Wilcox sand discovery between Fish and Sasakwa pools, Chapman & McFarlin found good saturation in Booch sand at Craig 1, SEc 4-6n-8e, Hughes County. Sand was penetrated from 2737 to 2742 feet with operations going ahead.

Arbuckle lime pay will be sought at F. O. Freeman's Dawson 1, C SE SW 1-23n-15e, one mile south of Talala gas pool, Rogers County. South of Wilzetta pool, Lincoln County, Gulf Oil Corporation et al staked location for Vlasek 1, CEL NE NW 2-12n-5e. The extension test is between South Wilzetta and Wilzetta pools.

One and one half miles northeast of North Boston pool, Osage County, Midco Oil Corporations' Tipps 1, NEc SW 17-22n-8e, landed 10-inch pipe at 1044 feet and last reported drilling below 1175 feet in streaky lime. The test will be drilled to Arbuckle lime.

Magnolia Petroleum Company has staked location for Margay-Johnson 1, SWc NE 29-25n-8w, 5 miles northwest of Hillsdale pool, Grant County. Southwest of Ramsey pool, Murray and Griffey Drilling Company's Davis 1, SEc 24-18n-1e, seeking fault line production south of the prolific Ramsey high, was drilling below 3350 feet. In Northwestern Kingfisher County, Anderson-Prichard Oil Corporation's Geis 1, C NE SW 15-18n-9w, was making hole below 7195 feet for a deep test.

Helmerich & Payne et al's Graham 1, SWc NE 12-1n-5w, Doyle pool, Stephens County, topped Deese sand of Pennsylvanian age at 5307 feet which carried good saturation, and was drilling below 5400 feet. Another test deepening to the new and third pay zone for the pool as same operators' Wade B-1, NWc SE 12-1n-5w, which originally was completed at 3866 feet.

Lewis & Meyers' Ford 1, NEc SE 14-7n-18w, in the Hobart area, Kiowa County, was a failure at 1786 feet. No show was had in the lime horizon as did Russell S. Tarrs and Gled Oil Company's Kelsay 1, which made more than 1500 barrels daily at the 1055-foot level. Offsetting this producer on the south, Shell Oil Company has location staked in NWc SW 20-7n-17w, with actual operation not yet begun.

North of Nicoma Park, Westcott-Nagle et al's Kramer Estate 1, NEc 17-12-1w, had nothing showing in upper Simpson at 6580 feet and was rotating in the second zone. The test is checking slightly higher than the Nicoma pool discovery. Oklahoma County had another wildcat in the play at Hall-Briscoe's Thompson 1, SWc NE 28-13n-1e, 4 miles east of Jones. Oolitic lime was topped at 4525 feet and drilling continued below 4750 feet.

In northeast Chickasha gas pool, Grady County, Sinclair Prairie Oil Company's Charlson 4, NEc SE 22-5n-8w, was drililng below 3195 feet. Possible pay formations will be encountered at increased depths as the well is located in the steeply dipping Anadarko Basin area. Same operator's German 1, SW NW NW 1-6n-13w, southwest of Carnegie, Caddo County, was below 6300 feet in lime.

A small show was encountered at Sinclair Prairie Oil Company's Ward 1, SEc 30-7n-1e, 6 miles northeast of Lexington. A bleeding core with saturation was picked up from 6527 to 6545 feet. Operations were below 6610 feet in Simpson dolomite with another core yet to be taken.

Oklahoma Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Caddo—		
Magnolia, Pau-Kune 10, ne nw ne 10-5n-9w	884	3398
Cleveland—		
Burton, Boggs 1, nec se 16-9n-2w (pb 7473 ft)	28	7646
Creek—		
Sunray et al, Harris 1 swc ne 30-14n-7e	¶0.3	2926
Brady, Kimball 1A, nw nwc sw 33-14n-10e	*	1760
Selby, Moore 1, se ne sw 36-16n-7e	*	3835
Schamblin, Mike 1A, se ne ne 13-17n-10e	¶3	2250
McAdams et al, Jackson 2, se sw nw 31-17n-10e	15	2758
Bryan Petroleum, Dean 1, ne ne se nw 18-18n-10e	30	2016
Garfield—		
Sinclair Prairie, Kisner West 41, nw se nw nw 19-22n-3w	80	1138
Lincoln—		
Wilcox, Sac and Fox 30, sw se se 16-14n-6e	75	3095
Okfuskee—		
Wells et al, Scott 3A, se se sw ne 25-10n-11e	9	2180
Hall et al, Hicks 1, nw ne se 11-11n-8e	*	3444
Shell, Keys 3, ne nw se nw 11-11n-8e	100	3420
Dunn et al, Beidleman 1, sw ne ne 8-13n-10e	50	3390
Okmulgee—		
Godwin et al, Randal 1A, ne swc ne 30-12n-12e	10	1953
Hazlett, Tucker 3, ne ne nw ne 11-13n-14e	*	2610
Dow, Rentie 3A, se sw se nw 13-14n-14e	5	1081
Price, Grayson 6, nw nw se ne 21-14n-14e	4	1140
Pawnee—		
Turner, Fender 1A, nwc se 25-20n-9e	*	2100
Pontotoc—		
Magnolia, Witherspoon 1, nec nw 3-1n-7e	¶2.8	1854
Cooper, McKinley 5A, ne nw ne 23-2n-7e	*	1435
Moore, Brown 3, nw se sw 34-2n-7e	123	1869
Kingery, No. 1 Flemming, ne nw ne 13-5n-4e	50	2601
Lake, Summers "A" 2, sec 26-5n-4e	20	2475
Stonewall, Meyers 1, sw nw sw 10-5n-6e	Abnd.	Lcn.
Pottawatomie—		
Trigg, Boight 1, nwc 30-6n-5e	*	3333
Tex Oil, Bean 6, sw nw nw 36-7n-4e	150	4215
Alma, Youts 2, swc 28-7n-5e	40	3150
Helmerich & Payne, Peters 2, nw ne sw 28-8n-4e	*	4018
Clark et al, Kottke 1, nwc ne 5-9n-5e	*	4451
Olsen, Gillis 4, se nw nw 5-10n-4e	68	4181
Seminole—		
Grimes et al, Wooten 1, nec 3-5n-5e	24	2860
Cities Service, Fish "A" 2, sw se ne 19-7n-8e (otd 3107 ft)	585	4121
Martin, Rose 1, nec nw 30-7n-8e	*	4250
I. T. I. O. Co., Faye 4, ne nw sw 13-8n-6e (otd 4215 ft)	40	4225
Storrey et al, Campbell 1, sec 28-8n-7e	*	55
Mid-West, Born 1, swc 36-9n-5e	*	4300
Moss, Aldridge 1, c s½ se se 27-10n-6e	11	3779
Tulsa—		
Pepis, Bishop 3A, c n½ s½ 35-19n-12e	*	1348
Wagoner—		
Gardener, Nelson 1, c nw ne 7-17n-19e	*	661

*Failures; †Junked; ¶Million cu. ft. gas.

Plan water flood in Nowata County area

Tulsa.—W. G. Phillips and J. B. Milan have made application to the Oklahoma Corporation Commission for permission to execute a water-flood program in Sections 25 and 26, 26n-16e, in Nowata County. Initial plans call for beginning the flood on 27½ acres within the block. Approximately 108 wells are averaging about one-half barrel of oil per well per day from Bartlesville sand. No natural gas is produced except for a small amount of casing-head gas, which is used exclusively for fuel and operating purposes.

Barton County Pools get line outlet

Kaw Pipe Line Company has completed a new gathering system in Barton County, Kansas, giving the Clawson, West Ellinwood and Marchand pools an outlet to the company's lines in the South Silica pool.

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Kansas Field Developments

Showings indicate two pools to get production extended. Cowley outpost test apparently has oil in new horizon.

Wichita.—Kansas passed a quiet week in field activity with 2 pools seeming assured of extensions and a Siliceous lime extension for Cowley County pool.

One-half mile south of Iuka pool, Pratt County, Atlantic Refining Company et al's Hacker 1, CWL SE SW 11-27-13w, cored saturated Simpson dolomite at 4355 to 4360 feet. Five and one-half inch casing was cemented at 4355 feet prior to drilling plugs.

In northeast extension area of Silica pool, Rice County, Cities Service Oil Company's Hathaway 1, CNL NE SW 27-19-10w, also drilled plugs in saturated Arbuckle lime at 3302 feet. This test is an east offset to Finston's Hathaway 1, a 2436-barrel well from Lansing lime. Extensive activity has considerably enlarged this pool during the year.

Kansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Barton—		
Triangle, Breford 1, c s½ se sw 25-16-11w	*	3447
Barnsdall, Rous 1, nec sw 28-16-11w	7604	3355
Sinclair Prairie, Esfield 1, swc ne 28-16-11w	*	3389
Shell, Ehrlich "A" 5, nwc 18-16-13w	1401	3364
Crown, Marchand 1, ne se nw 13-20-12w	*	3384
Butler—		
Landon et al, Tabing 2, sw ne ne 28-27-6e	40	3089
Morris, DeMoss "A" 4, sw se sw 5-28-7e	35	2689
Adair et al, Ramp 1, nwc 23-28-7e	60	2749
Cowley—		
Olson et al, Archer 2, se nw ne 24-30-5e (otd 2902 ft)	*	3332
Phillips, Glantz 1, sec ne 3-31-3e	*	3438
Barnett et al, Waite 5, nwc sw 21-31-4e	1455	3380
Cities Service, Hittle 1, sw ne nw 21-31-4e	2606	3378
Brewer, Lewis 4A, nw sw ne 28-31-4e	3104	3351
Trees, Hittle 2A, sw nw ne 28-31-4e	2275	3346
Lewis 7, se ne ne 28-31-4e	Abnd.	Lcn.
Smith et al, Clark 1, se sw sw 4-33-6e	1368	3524
Wilson 3, c e½ sw nw 9-33-6e	291	3511
Ellis—		
Dickey, Carmichael 2, c s½ nw nw 18-11-17w	34,996	3332
Ellsworth—		
Ash, Stratmann 1, nec sw 13-17-10w	*	3302
Greenwood—		
York State, DeMalorie c-6-W, c s½ nw 32-22-11e	20	2020
OKO, Shedell 17, nw sw se 15-23-13e	50	1770
Rice—		
Shell et al, Cramm "A" 4, csl sw nw ne 15-19-9w	3634	3222
Gulf, Ponnie 1, c w½ sw ne 31-19-9w	*	3276
Hinkle, Truesdale 2, sw nw nw 34-19-9w	756	3220
Gulf, Steckel 9, c e½ se sw 30-19-10w	56	3317
R. Davis, Proffitt 1, c w½ nw nw 9-20-9w	553	3255
Wolf Creek, Bauer 1, c w½ nw sw 23-21-7w	1390	3395
Russell—		
Bridgeport, Mills "B" 6, ne sw se 33-13-15w	331	3334
Landon, Boxberger 3, ne sw se 26-14-14w	2566	3001
Stafford—		
Saco, Elseh 1, nw ne nw 6-22-12w	*	3676

*Failures; †Junked; ¶Million cu. ft. gas.

Roth Oil & Gas Company apparently discovered a new zone at Gretsinger 3, SW NE NE 15-31-4e, Cowley County. From Lansing lime at 3015 feet, the hole filled 300 feet with oil and 400 feet with water. Arbuckle lime was penetrated to 3465 feet and oil rose 1500 feet in the hole as operations were suspended. The test is a mile northeast of lime production and ¼ mile southwest of an Arbuckle lime dry hole. Bartlesville sand produces in the area. In the same county, J. R. Lovell and F. G. Holl's Olsen 1, NEc SW 13-35-7e, 1 mile south of production in Olsen pool, hit a small showoing of oil in Mississippi lime topped at 2834 feet. The test is drilling ahead. East of the pool, F. G. Holl et al's Olsen 1, NEc SW 6-35-8e, had derrick up. Cowley County reported 15 operations during the past week with Hittle pool seeing major drilling activity.

A discouraging wildcat failure for Pawnee County was reported at Cities Service Oil Company's Roberts 1, C SE 31-21-15w, 9 miles south of Pawnee Rock pool. Location was on a large block held by the operators. A core from 3926 to 3936 gave up only tight dolomite and salt water. Arbuckle dolomite was topped at 3924 feet where 5½-inch casing was landed. Operators shut down for orders.

A show of gas for Kiowa County's wildcat venture at Sinclair Prairie Oil Company's Price 1, NWc SW 22-28-20w, west of Mullinville. A 200,000 cubic foot showing at 4920 feet to 4930 feet with a show of oil was had.

North of Stumps pool, Ellsworth County, Central Petroleum Company and Duwe & Farris' Schrepmann 1, CSL SW NW 27-17-10w, had good oil stains in Arbuckle lime at 3322-25 feet. Plans call for acidizing before testing.

Operators were testing at Henry Bennett et al's Peterson 1, CSL NW NW 32-20-5w, ½ mile east of production in Barnholdt pool. Chat was topped at 3350 feet and casing set at 3353 feet. The pools extend from McPherson County into Rice County. A wildcat location for the county was staked at C. L. Carlock et al's Hoyer 1, C S½ SE NW 6-21-1w, 2 miles northwest of Graber pool.

Another failure for Forest City Basin area of Northeastern Kansas was registered. Three Star Oil Company plugged Griffith 1, C NW SE 4-14-18e, at 2120 feet with no shows encountered.

North edge of Trapp pool, Russell County, was defined in Jackson & Porter's Flegler 1, NE SE SW 11-15-14w, being abandoned at 3304 feet in Arbuckle lime. Greenwood County had a dry hole between Teichgraber and Wilkerson pools at Katz Oil Company's Jackson 1, SWc 1-25-8e, given up at 2338 feet.

Jess Cling et al's Erickson 1, NEc 28-16-3w, north of Lindsburg pool, Saline County, was drilling below 2650 feet.

Illinois Developments

Keensburg well cores thicker Cypress sand section. Mill Shoals in White County promises townsite drilling.

Mattoon, Ill.—Importance of the Keensburg area of Wabash County grew last week with reports that J. M. Roberts' B. Legier 1, Lot 2, Block A, in the town limits, cored 30 feet of Cypress sand saturation. Previous wells in the area drilled from 20 to 25 feet of Cypress.

North of town and offsetting the discovery, C. D. Neff's A. P. Bump 2 was completed with a flowing production slightly less than 1000 barrels a day. Kitley & Elliot's Methodist Church 1, Lot 11, Block D, was given a shot of nitroglycerine and was being completed. Production estimates ranged between 100 and 200 barrels daily.

On the southwest edge of town, Bob Hayes and F. W. Olin's A. Gray 1, SE 8-2s-13w, offsetting W. S. Tatum's Williams 1, set casing to 18 feet of Cypress saturation with bottom at 2474 feet. This well topped the Barlow lime at the same depth as Williams 1, but found the Cypress 50 feet lower. The Biehl sand at about 1800 feet has shown some saturation in wells drilled in this area, and probably will be tested later.

Four miles west of Allendale in Wabash County, C. D. Neff's W. Litherland 1, SW SW NW 8-1n-12w, reported a favorable oil saturation in the Biehl sand. This wildcat was announced as a deep test when started early last month. Its successful completion at any depth would probably precipitate a town-lot drilling boom in Allendale, a town of less than 500 population.

Two miles north of Grayville in Edwards County, C. G. McFadden, Claude Bell et al's Charles Bump 1, SE SW 34-2s-14w, reported 15 feet of well saturated Cypress sand to which casing was set. About 2 miles due north of this test, H. K. Riddle's Fred Schroeder 1, SW SW 22-2s-14w, was switching over from cable tools to rotary equipment.

Leases on a number of lots have been taken in Grayville on the strength of the showing at Charles Bump 1, and officials are reported considering adop-

ion of an ordinance to regulate drilling inside the city limits.

Another town apparently destined for a town-lot drilling campaign is Mill Shoals, northern White County. Production records for this new area were broken with completion last week of H. H. Weinert, Inc.'s Miller-Andrews 1, SW SW NW 29-3s-8e, which flowed 500 barrels through a 3-inch choke in 24 hours. It was completed in the Aux Vases sand. In the south end of the pool, T. F. Morrow and J. W. Gilliland's Cynthia Cox 1, NW NW NE 6-4s-8e, was completed with an open flow initial of 360 barrels in 24 hours. Casing was set to a good Aux Vases saturation at A. V. Riley's Frank Dauby 1, SW SW NE 31-3s-8e.

One mile east of production in the Lake Centralia-Salem pool of Marion County, Joe Miller's Foster 1, NW SW SW 11-1n-2e, was reported to have set casing to the St. Louis lime at 2224 feet. This formation has not been explored to any extent in this area, and successful completion of Foster 1 would improve possibilities of wells found beyond the limits of the Benoist and McClosky producing horizons.

The state's only Niagaran lime pool, the Sandoval of Marion County, reported its largest well. Max Pray Drilling Company's Robinson 2, NW SE SW 4-2n-1e, started flowing at the rate of 150 barrels an hour after a 3000-gallon acid treatment of 12 feet of pay, topped at 2990 feet. It was the pool's fifth producer, and the first to be treated. It offsets this company's Robinson 1, which extended the pool ¾ mile east. One other completion was recorded in this pool, but a production test had not been made. Menhall-Benoist's Benoist 3-A, NW 8-2n-1e, was completed, while Southwestern Oil & Gas Company's Benoist 3-B, NE 8-2n-1e, was cleaning out preparatory to a test of the Niagaran.

In Richland County, Pure Oil Company set pipe to the McClosky at Homer C. Coen 1, SE SE SE 36-5n-9e, Denver Township. The test is 2½ miles northeast of the Denver Township pool and 2 miles south of the Jasper County line. It was the sole active operation in that county.

In a week that saw 17 new wildcat starts, three new counties were added to those undergoing exploration. In Henderson County, Media Oil Company's Pendervis 1, 1013 feet from the north line and 881 feet from the east line, NE NE 17-9n-4w, was standing at 520 feet; in Livingston County, Mitchell et al's McWilliams 1, 320 feet from the north line and 330 feet from the west line, SE 3-30n-6e, was drilling at 460 feet, and in Menard County, William Johnson's T. Johnson 1, SE NW NE 26-19n-5w, was spudded.

Illinois Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Clay County—		
Pure, Clay City Bank 8A	613	3138
Clay City Bank 6A	81	3096
Wiser Oil Co., Daly 3	1128	3149
Douglas County—		
Lewellen & Phillips, Kennedy 1..	*	527
Edgar County—		
Burkett, Denton & Burns, Baum 1	*	610
Fayette County—		
Shulman Bros., Combe 8	150	1574
Combe 9	150	1576
Texas Co., E. G. McKee 1	210	1550
E. G. McKee 2	210	1559
Gibson & Jennings, McDonald 2	88	1559
Carter, Harvey Durbin 7	80	1560
S. M. Mills 1	80	1561
John Hogan 2	140	1519
Harley Yolton 3	444	1571
O. E. Gibson 6	504	1575
S. Leona 3	237	1569
M. B. Heckert 6	372	1551
O. Sidner 6	469	1553
Ann Hopper 4	774	1593
Ira Boles 1	384	1597
L. F. Beck 1	48	1552
Goldie Hedges 1	99	1598
J. T. Wright 6	84	1627
Geo. Bauer 2	308	1603
J. Sloan 3	I	1608
A. B. Riley, Rhodes 1	48	1586
Gallatin County—		
Cotes & Zeppa, Green 2B	134	1810
Hamilton County—		
Kingwood Oil Co., Griswold 1	*	3197
Jefferson County—		
McQueen et al, Sorenson 1	*	2350
Marion County—		
Ohio, Murray 11	600	1875
M. Young 15	396	2080
Texas Co., W. B. Carr 3C	126	1859
N. Bryant 11	168	1886
S. Williams 7	238	1856
E. Luttrell 7	26	1996
Cameron & Johnson, Antioch Cemetery 3	265	1856
Lee, Mt. Moriah Church 1	*	2155
Mammouth P&R, Seibel 5	165	2120
Magnolia, J. H. Young 49	2160	2070
J. H. Young 50	544	2065
J. H. Young 51	1440	2080
S. Shanafelt 14	1680	2065
S. Shanafelt 16	3744	2065
S. Shanafelt 17	4418	2065
J. R. Young 9	4080	2055
J. R. Young 10	1900	2065
J. R. Young 11	1776	2057
J. R. Young 12	2280	2056
J. R. Young 13	1135	2050
Selp et al, Young Strip 1	600	2059
J. Mitchell, F. Lee 2	*	1952
Monroe County—		
Ames Oil Co., Gummershimer 4..	40	471
Morgan County—		
Underwriters Oil Synd., Diller 1..	*	1160
Moultrie County—		
Signal Hill Oil Co., Beale 1	*	1887
Richland County—		
Ohio Oil Co., Chapman 1	29	3021
Maybee Dr. Co., Sparr 7	150	2598
Pure, Southgate 4	238	2642
St. Clair County—		
Tanner & Melburne, Miller 1	*	1460
Shelby County—		
Elmer Boseke, Zumbahlen 1	*	2452
Wabash County—		
Howell et al, Shultz 2	134	2461
Eason Oil Co., Schauf 1	103	2486
Washington County—		
Cochrane et al, Orlick 1	*	....
Magnolia, Francis 9	14	1297
S. Kurwicki 5	50	1277
O. W. Francis 10	63	1300
Shell, M. Kloczak 3	80	1281
Wayne County—		
Pure, McCracken 1A	85	3106
H. H. Weinert, McPherson 2	1200	3244
Coulter 1	26	3351
Carl Robinson, Leech 1	*	3364
Oakley 3	720	3430
Carson Oakley 4	500	3419
Pioneer Drl. Co., Cuthbertson 1	*	3415
White County —		
Nation et al, B. McIntosh 2	650	3258
Williamson County—		
Reece & Roberts, T. Arnold 1	*	2397

"I" indicates gas input well.

*Failures; †Junked; ¶Million cu. ft. gas.

Ohio Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Athens County—		
Cody, J. Jeffers 2	¶.13	473
D. T. Orndoff, Wooley 1	¶.10	1468
Gallia County—		
Addison Synd., Murray 1	¶	1538
Guernsey County—		
Jones et al, Sudduth	*	1457
Hocking County—		
Curtis et al, Brown 1	*	715
Jefferson County—		
Glenn et al, Kelly 1	*	1240
Knox County—		
Knox Explo. Co., Alexander 1	¶.20	2854
Brown et al, Burras 1	¶.50	2213
Licking County—		
J. T. Bebout, Borne 1	¶2.50	2620
Medina County—		
H. L. Pearsall, Vandemark 4	3	544
N. Y. O. Oil Co., Brown Jr. 22	2	430
Brown Jr. 23	1	416
Brown Jr. 24	1	417
Brown Jr. 25	1	350
Ohio F. G. Co., Geisel 1	*	2577
Edson & Son, Auble 2	*	440
Muskingum County —		
Atha Oil Co., Morrison 2	65	3125
Wilking Co., Ikehorn & Wilking 1	*	3117
Putnam County—		
Pembers & Masters, Myers 1	5	1437
Summit County—		
Obermiller Bros., Bordner 1	¶.10	2923
Washington County—		
Paynter & Beaver, Hagen 1	1	1731
Burkhart O&G Co., Hall 2	¶.15	1522

*Failures; †Junked; ¶Million cu. ft. gas.
"I" indicates water input well.

West Virginia Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Boone County—		
Ottawa Gas Co., Ellis 1	¶.98	1430
Cabel County—		
Roy Gas Co., Adkins 1	¶.31	3241
Calhoun County—		
Hope Nat. Gas Co., Hardman 7846.	¶.90	2210
Hancock County—		
Braden Co., Hewitt 26	2	1085
Harrison County—		
Eagle Gas Co., Heldreth 1	¶.22	2623
Kanawha County—		
Godfrey L. Cabot, McLean 2	¶11.40	5003
Lincoln County—		
Jackson et al, Adkins 1	¶.47	1650
United Fuel Gas Co., Lovejoy 2388.	¶.24	3695
Big Laurel Gas Co., Plumley 2	¶.16	3565
Roane County—		
Bonnett O & G Co., Bonnett 1	¶.50	1619
Wirt County—		
T. C. Exline, Fee 1	*	3405

*Failures; †Junked; ¶Million cu. ft. gas.

Kentucky Fields

Hancock County test not able to overcome salt water

Owensboro, Ky.—Inability to shut out salt water in the McClosky brought abandonment of Phillips Petroleum Company and Carter Oil Company's B. H. Parker 1, 2 feet from each line in the extreme northeast quarter, Section 22-L-25, Hancock County. The wildcat was drilled to 4921 feet after topping the Devonian at 4529 feet. It had been plugged back to the McClosky, topped at 2973 feet, but the small amount of oil present in that formation could not be produced. It was the week's sole wildcat completion.

In Henderson County, Yingling & Hayes' Silas Nunn Heirs 1, 1500 feet from the south line and on the east line, Section 18-0-25, was a new wildcat start. Being drilled with rotary, it was at 1820 feet at last report.

A second attempt of Ralston & Sales to gain production on the Annie Stewart lease, near production in the Spottsville pool of Henderson County, was

Kentucky Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Breckenridge County—		
E. H. Ellison, Davis 1	¶.07	1470
McDonough & Co., Dean 3	*	201
Butler County—		
M. P. Evans, Givens 2	*	320
Daviess County—		
Master Oil Co., Baird 2	250	1807
Smith et al, Cravens 1	*	1380
Baldwin Oil Co., Westerfield 1	*	1102
General Dr. Co., Tassie Church 4	*	1047
Hancock County—		
Lincoln Pet. Co., Campbell 2	*	551
Henderson County—		
Martin & Goldberg, Dempewolf 1	200	1890
Grimm et al, Fulton 1	*	1001
Knott County—		
Kentucky-W. Va. Gas Co., Hall 411.	50	2607
Lee County—		
T. Wittner, Tipton 1	2	....
Bear Track Oil Co., Huntington 1.	¶	....
McLean County—		
Ohio, McManama 13	40	1455
Stewart et al, Shockley Heirs 5	*	1647
Mocarz Oil Co., Ed. Traylor 5	*	1500
Muhlenberg County—		
South Pennsylvania Oil Co., Rhodes 1	*	1797
Ohio County—		
Tom Graham Oil Co., D. Vance 2	45	1861
Powell County—		
Evans Oil & Gas Co., Rogers 3	25	800

*Failures; †Junked; ¶Million cu. ft. gas.

a failure. The hole was plugged at 2166 feet. The No. 1 of these operators on this lease was junked just above the McClosky horizon after an unsuccessful fishing job. Magnolia Petroleum Company's Sam Green 3, 900 feet south of the No. 1 and 900 feet west of No. 2, both McClosky producers, was testing 5 feet of McClosky saturation, topped at 2172 feet. Indications were that the well would make about 50 barrels a day.

H. H. Schwarz' Strothers Banks 1, near the mouth of the Green River, Henderson County, was tied up with a fishing job after coring 5 feet of tight saturation in the upper McClosky, topped at 2182 feet.

Smith & Toomes' O. H. Parker 1, wildcat near Wrightsburg, Webster County, was drilling at 700 feet. This test is across the county line from H. H. Schwartz' Traylor-Frissee 1, which had 4 feet of good McClosky lime saturation below 1231 feet, but which was subsequently drowned out by water.

Pennsylvania Completions

Bradford District

Company, Well and Location	Init. Prod. Bbls.	Depth
Penn Valley Crude Oil Corp., Redfield	8	....
Walker Bros. et al, 382-3 Bingham	2	....
Smith Newton Oil Co., Lincoln	2	....
T. H. Givan, Cummings	2	....
Duke Producing Co., Duke	1	....
W. A. Bolles, Borden	1	....
C. M. Lippert et al, Lippert	3	....
Forest Oil Corp., 2 wells	2	....
Forest Petroleum Corp., 2 wells	2	....
Niagara Oil Corp., 4 wells	4	....
Bradford Transit Co., 13 wells	13	....
Bradford: Water Intake Wells		
Esther Oil Co., Inc., Lawton	...	....
Forest Oil Corp., 3 wells	...	....
Forest Petroleum Corp., 3 wells	...	....
Niagara Oil Corp., 3 wells	...	....
Butler-Armstrong District		
Carl Hilliard et al, A. I. Bell	4	....
Middle District		
I. Dana Kahle, J. M. Nickle	½	....
C. L. Irwin, Harriet & Laura B. Criss	1	....
S. H. Elder & Co., Hamlin	2	....
Commercial Lumber Co., American	1	....
Armstrong County—		
Chestnut Ridge Oil & Gas Co., E. J. Shirdy 1	¶.60	1470
Indiana County—		
Equitable Gas Co., J. J. Potts 1	¶.02	3845
Potter County—		
Empire Producing Co., R. Donovan 1	¶35.00	4886
Evjen & Harris, A. R. Mitchell 1	*	5501

New York Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegany County—		
J. F. McBride et al, Garthwaite farm, Alma	5	1280
Otsquago Corp., Pike farm, Alma	6	1336
L. E. Norton, L. Norton farm, Scio	4	1262
Ford Oil Co., Frederick farm, Alma	6	1316
Sage & Runyan, Mather farm, Bolivar	7	1344
Marsh Oil Co., Withey farm, Bolivar	6	1372
J. P. Herrick, No. 2, Howe farm, Bolivar	8	1336
L. H. Thornton et al, Shaughnessy farm, Willing	5	1271
L. H. Thornton et al, Shaughnessy farm, Willing	4	1263
Chenunda Creek Oil Co., Richmond farm, Willing	6	1070
Scio Oil & Gas Co., Clark farm, Scio	8	959
Clark farm, Scio	7	946
Allegany: Water Intake Wells		
Bradley Prod. Corp., Monitor farm, Alma	...	1286
Harold Duke et al, Witter farm, Scio	...	1295
Chenunda Creek Oil Co., Richmond farm, Willing	...	1090
Bliven Hill Oil Co., Norton farm, Scio	...	980
H. W. Patterson, Coyle farm, Scio	...	960
Steuben County—		
New York State Natural Gas Co., L. Gurnsey 1	*	4693
W. Carpenter 1	*	4217

*Failures; †Junked; ¶Million cu. ft. gas.

Indiana Activities

Slight encouragement during week; two wildcat failures

Evansville, Ind.—Two Indiana wildcats were abandoned as dry last week, a period that saw little but routine developments with principal interest focused on the Griffin pool in Gibson County.

In Gibson County, Thomas Simmons & J. L. Taylor's Epperson Heirs 1, SE NE NE 9-4s-11w, Johnson Township, was plugged at 2554 feet. Also in this county, Michel Bros.' William A. Carithers 1, NE SE SE 23-1s-10w, Patoka Township, failed to recover lost tubing and was junked. This test had good saturation in the Hardinsburg sand, topped at 1345 feet, and a new try will be made on this lease 400 feet to the north. Nearby, Prudential Life Insurance Company 1, NW NW NW 36-1s-10e, was located.

Chester Oil Company's A. Varner 1, 330 feet from the north lime and 330 feet from the east line, NE NE SW 24-6s-5w, Huff Township, Spencer County, a wildcat northeast of Grandview, reported an oil show at 900 feet that may make a commercial well. Near Gentryville, John R. Knapp's J. D. Trent 1, 200 feet from the south line and 330 feet from the east line, NE NE SW 11-5s-6w, set casing at 700 feet for a test of Jett sand saturation.

The first good Knox County producer was promised by Midwest Development Company's Ward Frey Estate 1, 330 feet from the south line and 330 feet from the east line, SE SW 11-2n-11w, 6 miles south of Vincennes, where pumping unit was being installed. After two acid treatments, it swabbed at the rate of 10 barrels an hour. In Decker Township, Adams Oil & Gas Company's C. McLinn 1, near the Wabash River, was reported abandoned at 2340 feet.

Northeastern outpost to the Griffin pool, Tide Water Associated Oil Company's M. P. Kelly, SE SE NW 8-3s-13w, was rigging up a pumping unit, but production possibilities were slight because of salt water. After drilling through a dry Cypress, Apex Drilling Company's Prentice Julian 1, NE NE SE 26-3s-14w, set casing to the McClosky.

Indiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Gibson County—		
Continental, Bozeman 1	2000	2537
Lewis Prod. Co., Cooper C-1	675	2523
Cooper B-1	550	2889
Cooper A-3	150	2523
Huddleston et al, J. Apex 1	400	2511
Fitzpatrick & Hayes, Cooper 3	625	2872
Bander et al, Cooper 1	202	2522
Midwest Oil Co., Beatly 1	40	1672
Walker et al, Schmidt 1-A	35	969
Thomas & Lacy, Cooper 3	20	2528
Pike County—		
P. G. Thomas, Logan 1	*	76
Posey County—		
Sun, Dietz 5	225	1905
Spencer County—		
Geo. Randolph, Axton 1	*	1680

*Failures; †Junked; ¶Million cu. ft. gas.

West Texas Fields

Pecos County Ellenberger test setting casing to try a show. Cedar Lake discovery expected to flow after acid treating.

San Angelo, Texas.—The second Ellenberger lime test given the Apco pool, Pecos County's single Ordovician area, encountered sufficient porosity and saturation to warrant the landing of a string of 7-inch casing, although it is low on structure. Magnolia Petroleum Company's Masterson 1, C E¼ W¼ H&GN Section 104, Block 10, ¼-mile southwest of the discovery, found the Simpson section cut out in passing from the Permian to Ellenberger at 4596 feet, with an elevation of 2429 feet. Porous lime at 4599-4611 feet yielded a small amount of oil cut mud when this zone was given a drill stem test. Forty feet of rotary mud was recovered on re-test, with no oil or gas showing. Core pulled at 4611-14 feet contained porous lime with oil show, and operations were halted to cement 7-inch pipe at 4597 feet. Anderson-Prichard Oil Corporation et al's Masterson 1 gave the county its first deep production last April in logging the Permian-Ellenberger contact at 4554 feet, with an elevation of 2425 feet, and flowed natural from pay at 4545-70 feet and 4580-95 feet.

Search for Ordovician production on the Todd ranch, Crockett County, is being resumed by Continental Oil Company et al on a 4480-acre unit block. This projected deep test will be drilled at C S½ NE SW GC&SF Section 30, Block WX, 2½ miles west of Superior Oil Company et al's Todd 1, which was abandoned in Ellenberger at 7424-7948

West Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Concho County (Wildcat)—		
Byerley et al, Noyes 1	*	1529
Ector County (Foster)—		
Stanolind, Cowden 22-A	1284	4185
York-Harper & Sloan-Zook Co., Foster 6-D	1516	4308
Glasscock County—		
Petty & Thompson, Blake-Conoco 1	*	1700
Jones County—		
Kittery Oil Co. et al, King 1	*	1937
Pecos County (Pecos Valley)—		
Kone Prod. Co., Pecos Valley Oil Co. 12	425	1633
Pecos County (Shearer)—		
Childress Roy. Co., Masterson-I. T. I. O. 11	187	1490
Pecos County (Tobarg)—		
Cardinal Oil Co., Tippett-Kirby 53-E	38	455
Ward County—		
Reese & Pittman, Texas Cotton Industries 1	203	1903
Sahara Oil Corp., Dorr-Atlantic 3	65	2087
Sinclair Prairie, Archenhold 17	351	2709

*Failures; †Junked; ¶Million cu. ft. gas.

Control the Pipe-line Flow

With these General Electric Motors

WHETHER you plan to install centrifugal or reciprocating pumps—or both—in your pipe-line pumping ions, General Electric can supply the types of motors control in the sizes you need to operate with economical of power.

rge pipe-line company recently found it profitable to all of the three types of motors shown here. It wanted ump gasoline at varying rates over its main line, yet allow for the use of many outlet lines. And it wanted to keep its control as simple as possible.

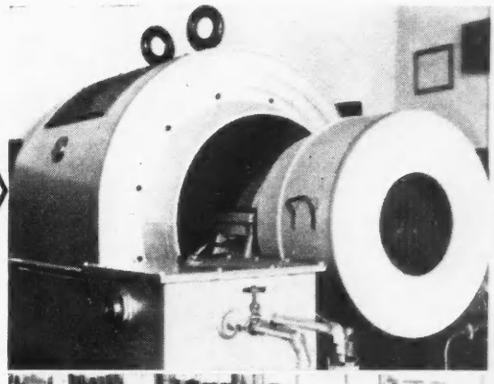
G-E engineers helped solve this problem by devising a system employing these three types of motors, with control so simple that it could be handled by unskilled operators.

What was done for this company can be done for you. Whatever your pipe-line pumping needs, consult your nearest G-E representative, or write General Electric, Schenectady, N. Y.

HIGH-SPEED WOUND-ROTOR MOTOR

Here's a G-E high-speed wound-rotor induction motor connected to a centrifugal pipe-line pump in Pennsylvania. Its speed can be varied to change the rate of pumping. General Electric pioneered in the application of this type of motor to pipe-line pumping service.

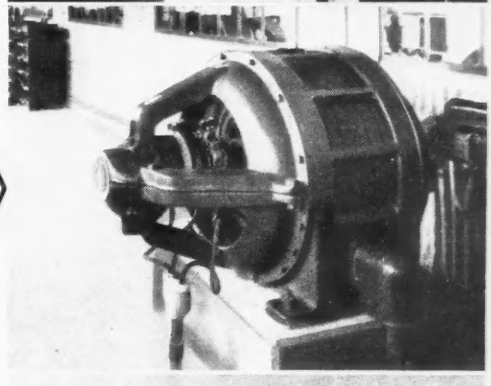
G-E 600-hp 3600-rpm motor



LOW-SPEED WOUND-ROTOR MOTOR

This G-E low-speed wound-rotor motor, shown driving a 15,000-barrel pump in an Oklahoma pumping station, provides the advantages of electric drive for reciprocating pipe-line pumps. It has the high starting torque and variable speed required to drive this type of pump at varying rates of flow.

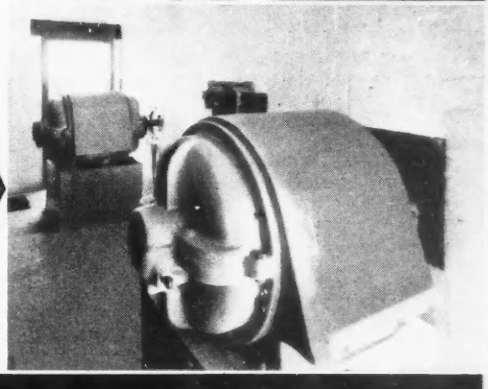
G-E 200-hp 450-rpm motor



HIGH-SPEED SQUIRREL-CAGE MOTOR

This G-E high-speed squirrel-cage induction motor, one of the most popular G-E motors for pipe-line pumping, has many distinctive features, including axial-rotor ventilation to reduce windage noises, and non-wearing air seals to maintain effective lubrication. In this picture, two of them are coupled through a fire wall to centrifugal pumps in a Texas installation.

G-E 350-hp 3600-rpm motors



GENERAL ELECTRIC

011-536

feet, and 1½ miles southwest of Stanolind Oil & Gas Company's Todd 1, which checked considerably higher on structure and also gave promise of making an oil producer. It was abandoned at 8041 feet.

Stanolind Oil & Gas Company's Rayner 1, discovery oil well for the Cedar Lake prospect in northeastern Gaines County, is testing on gas lift while waiting treatment with 2500 gallons of acid at 4661-4783 feet. It was plugged back from 4830 feet after encountering 2½ barrels of salty-sulphur water per hour on swabbing test, with packer at 4790 feet. The water test was not adequate to determine if the fluid could be exhausted as is the case with intermediate water found in the nearby Seminole field, which embraces a similar type of structure. The rate of oil fill in Rayner 1 after plugging back indicates that it may make a flowing producer when acidized in the 39 feet of saturated and porous lime logged below the 4661-foot level, with an elevation of 3066 feet.

All active fields in the district were registering an unusually large quota of completions late last week as result of the lifting of the production shutdown and the restoration of crude prices to former levels. The completion of oil tests were generally held back in the flowing fields because of inability to obtain clearance tenders as stock tanks filled. New locations declined during the period, but are expected to be above normal for several weeks. Operators are confident of a firm demand for crude for a period of months as buyers attempt to replenish necessary working stocks of oil while taking care of current refinery requirements under the handicap of a 5-day producing week.

The Wasson-Bennett district was credited with the largest number of wells awaiting completion gauge. The Aloco Oil Company was preparing to test 7 wells at the close of the week.

Humble Oil & Refining Company's Westheimer-Daube 1, northwestern Cochran County wildcat that is scheduled to drill to 9500 feet, resumed drilling the past week after cementing 9⅝-inch pipe at 3655 feet.

More development is in store for the south portion of the Wheat field, original Delaware lime discovery in the district, as result of the recent completion of Fred Hyer et al's L. B. Russell 1, near west corner of W&NW Section 80, Block 1. This well flowed 600 barrels of 36.9-gravity oil initial after 40-quart nitro shot in sand at 4205-44 feet for a base allowable of 82 barrels daily. Hyer et al propose to start another test shortly.

J. D. Bodkins et al's Foster-Humble 1, C SE NE T&P Section 12, Block 43, T-3-S, only active wildcat in Ector County, was drilling at 4330 feet. Top of Yates was logged at 2710 feet, with an elevation of 2926 feet.

West Central Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Brown County—		
Murray et al, Cross 1	*	1110
Callahan County—		
Robart et al, Grandy 1	*	667
Palo Pinto County—		
Palo Pinto O&G Corp., Wilbar 1 sec 59	*	3331
Shackelford County—		
Baker & Daniels, Davis 11, sec 20	*	1804
Hooker et al, Walker 1-B	*	597
Whittekin et al, Humber 2, sec 21	*	500

*Failures; †Junked; ¶Million cu. ft. gas.

North Texas Fields

Bonita well showing calculated to encourage development. Upper-Strawn production at Noconoa appears important.

Wichita Falls.—Production test given the second lower-Strawn well for the Bonita pool, eastern Montague County, rates it as an unusually large natural producer that will encourage more development. The county's earlier deep strike, centering immediately west of the Nocona townsite, added a natural flowing well from the upper Strawn to give it two pays, and a second outpost is preparing to complete in this new zone.

The Bonita area became a contender for listing as one of the important discoveries in North Texas this year when the United Producers Company and Continental Oil Company's P. H. Braman 1, NWc G. R. Jaquez Survey, A-393, flowed 25 barrels of 38-gravity oil per hour through 1/16-inch tubing choke. Production is from sand at 3798-3844 feet. Tankage is being erected for completion gauge. Granite wash, topped at 3740 feet, carried show of oil at 3746-85 feet, but was cased off in landing 7-inch at 3795 feet. Braman 1 is a southeast offset to the 2900-foot discovery pumper, and is ½ mile south by east of Benton & Holmes' Bowers 2, which made a natural producer from the lower Strawn at 3853-69 feet after casing off good show of oil in granite wash at 3780-3853 feet. Phillips Petroleum Company's Custers 1, east offset to the latter, was drilling at 3760 feet.

Upper-Strawn production established in the Nocona pool by L. S. Youngblood and R. L. Foree's Davis 1, 1/3 mile northeast of the 4600-foot production, gives promise of embracing more territory than the latter zone. Davis 1 swabbed salt water in the discovery sand at 4672-78 feet, which was low on structure. The hole was plugged back in casing to 4575 feet to perforate casing with 90 shots opposite upper sand at 4317-38½ feet, resulting in a flow of 150 barrels of oil on 3-hour potential test through ¾-inch tubing choke. Casing and tubing pressures dropped from 950 to 425 pounds and 800 to 100 pounds, respectively, during this official gauge. Rogers & Rogers' Burnett 2, 830 feet southeast of their discovery, also failed to show for a producer in the original pay in drilling to 4704 feet. This fifth test for the pool has plugged back to try for a completion in sand at 4287-4327 feet, which yielded oil flow on drill-stem test, and registered 1800 pounds bottom-hole pressure.

Western Clay County recorded its third Strawn discovery for the current year when Frabor-Hodges Corporation and Sinclair Prairie Oil Company's Kinder 1, NEc Lot 11, Block 2, Clark-Plumb Survey, pumped 99½ barrels of oil in 24 hours, with about 1 percent bs&w showing at the end of the test. This wildcat has been in process of completion for a month, having plugged back to 4158 feet for 60-quart nitro shot at 4130-52 feet after failing to produce in the lower Strawn and also the Caddo at 5445-5527 feet. It is 4.6 miles east of the Burns pool.

L. T. Burns et al's Pickett 1, ½ mile northwest of the Burns pool and previously listed as a failure after plugging back from 4454 feet to 4446 feet for a small show of oil and water, has moved in machine to workover and try for an oil completion. Seven-inch pipe was cemented on top of Strawn saturation at 4430 feet, thereby making it hazardous to shoot the comparatively thin oil zone.

Clay County has a new deep wildcat underway, and another test has been contracted. Shell Oil Company's G. W. Scaling 1, near center of Black 87, J. H. Belcher Survey, 3¾ miles south of the Burns pool, has rigged up to seek Strawn production from the company's large block, which was taken last spring at an average cost of $25 per acre.

Continental Oil Company and the Superior Oil Company (California), owners of 1609 acres and 623 acres, respectively, centering 4½ miles south of Jolly and 4½ miles northwest of the Halsell 2-well pool, have unitized their acreage to drill a 5000-foot test, starting prior to October 10. Continental Oil Company paid a cash bonus of $10,000 for its acreage, and also assumed an oil payment due land owners and also H. M. Horton and Pete Wiggins, who negotiated the project on geophysical information.

The K-M-A deep lime area continues to afford the greatest volume of drilling within the district, although operations have tapered off as result of the production holiday. This field has 42 operations, including 11 tests drilling with rotary above the Strawn pay, and 18 wells in process of completion, else awaiting potential gauge. Magnolia Petroleum Company, Shell Oil Company and Sinclair Prairie Oil Company have

North Texas Completions

Company, Well and Location	Init. Prod. Bbbls.	Depth
Archer County (Hull-Silk)—		
Ligon et al, Moss 1-B, sec 1	1080	4311
Archer County (Wildcat)—		
Fagadau et al, Melugin 1, sec 41	*	1161
Clay County (Wildcat)—		
Clacotex Oil Co.-Kimmel, Lyon 1, sec 40	*	1202
Clay County—		
Tanner et al, Rigsby-Texaco 12	5	215
Cooke County (Walnut Bend)—		
Ed. Cox & Jake Hamon, K. Neu-Texaco 3-B	324	5378
Cooke County—		
Pace Pet. Corp., Dennis 1-C	*	2005
Robinson et al, Otto 15-B	58	851
Cooke County (Wildcat)—		
Pace et al, J. T. Donald 1	*	2881
Jack County (Wildcat)—		
Scharf et al, W. M. Crowley 1, sec 2	*	535
Wichita County—		
Fain-McGaha Oil Corp., Griffin 4-B-S, blk 3	12	1810
McGann et al, F. P. Warren 1	*	1424
Wichita County (Wildcat)—		
Montgomery et al, Martin 1, blk 4	*	1410

*Failures; †Junked; ¶Million cu. ft. gas.

been the only active majors in recent months.

Total cost of completing wells in the 3850-4100-foot Strawn has been reduced to an average of $19,000, including surface connections. The cost was approximately $24,000 when the field launched its large-scale development during the latter part of 1937. Contractors are bidding about $10,000 per well, furnishing derrick, pits, fuel, water, labor and machines to complete wells after drilling to the final casing point with rotary. This contract price has been reduced $2000.

Outpost drilling and the search for production in the Ellenberger continues to attract independents. Staley Oil Company's Banta 1, near west line of Thomas Cooke Survey, A-34, western outpost for the Wichita County portion of K-M-A, registered low on structure in logging top of Strawn lime at 3825 feet. Nominal show of oil was reported in sandy-shale at 3825-29 feet, and the remainder of the section proved dry. It was carried to Ellenberger at 4490-4586 feet, which also was barren. The test is awaiting orders. Hanlon & Buchanan, Inc., largest acreage owners in the northeast sector, have failed to make a commercial pumper in plugging back their Fassett-Tuttle 1-F, SWc of Day Land & Cattle Company Survey, A-596. This test is 1½ miles east of deep production, and made 2½ barrels of oil and 40 barrels of water on 10-hour pumping gauge. It drilled to water at 4145 feet, then plugged back to 4119 feet for a second nitro shot. The company's Collins 1, SWc of R. Brown Survey, A-520, an intermediate test, logged top of lime at 3841 feet, or 14 feet higher than the above test.

Consolidated Oil Company's Barnes 1-B, near SWc NE NE H&TC Section 9, Block 7, most westerly test in the K-M-A field and quarter mile northwest of flowing production, checked low on structure in logging top of lime at 3944 feet. Pipe was cemented at this depth, and machine will be used to penetrate the Strawn section.

Deep Oil Development Company and R. G. Drilling Company's Little 1, SW SW NE HT&B Section 2, A-811, previously indicated northeast extension producer for the Hull-Silk field, Archer County, gauged 92 barrels of high-gravity oil on 1-hour tubing test. Strawn sand was logged at 4315-30 feet. Competitive drilling is getting underway on a substantial scale between this northeast extension sector and the original producing acreage. Sinclair Refining Company, pipe line division, is reported to be planning a gathering system that would provide an outlet for all wells.

Texas Panhandle Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Gray County—		
Shell, Haggard 10	408	3300
Hutchinson County—		
Buck Oil Co., Jamieson 2	226	2940
Dolomite Oil Co., J. T. Thompson 1	20	3117
J. J. Perkins 5	120	3007
Pennawa Oil Co., Thompson 2	20	3075
Pennotex Oil Corp. (was C. C. Keech) Thompson 1	20	2979
Moore County—		
Canadian River Gas Co., Masterson 2-A	¶36½	2297

*Failures; †Junked; ¶Million cu. ft. gas.

East Texas Fields

East Texas pressure gains 44 pounds during shutdown

Figures released by the Texas Railroad Commission last week show that the average bottom-hole pressure for the East Texas field has increased 44.34 pounds during the time the field was closed in. Tests completed on August 12 showed an average pressure of 1083.42 pounds. Another series of tests completed August 28 showed an average pressure of 1127.76 pounds. Between August 21 and August 28, pressures went up 12.95 pounds.

These pressure increases should furnish the commission with an excellent basis for the contention that the shutdown was beneficial to the field and actually prevented physical waste.

Waskom outpost reaches 5595 feet

Shreveport.—Arkansas Fuel Oil Company's (Cities Service) Taylor 1, Simpson Holloway Survey, Harrison County, Texas, located 6000 feet southwest of the nearest of the company's Glen Rose and Travis Peak gas/distillate wells in the Waskom field, cored shale and lime last week at 5595 feet in the Travis Peak horizon. The well previously in a drill stem test of the Glen Rose lime from 4827 to 4880 feet showed estimated 20 million cubic feet of wet gas daily with three stands of brackish water with half-inch choke at top and bottom and open ten minutes. Pressure built up to 480 pounds.

Turner and Smith have spudded Panola Development Company 1, G. Gallaspie Survey, Panola County, Texas, one and one-fourth miles north of the same operators recently completed 40 million foot wet gasser, completed in the Glen Rose lime at total depth of 4998 feet. Five wells in the series are planned.

Texas drilling permits decline to 121

The Texas Railroad Commission last week approved permits for drilling 121 new wells in Texas, 37 less than were permitted the week before.

Three permits were granted to operators in the East Texas field in Gregg County, and five locations were reported from the remainder of the East Central Texas territory.

Producers in West Texas were allowed to drill 18 new wells, while from West Central Texas 19 locations were reported. The commission approved 21 locations in the Gulf Coast and 21 permits were granted in Southwest Texas.

The Panhandle District led the state with 24 permits, while North Texas producers were allowed 10 locations.

East Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Joiner Area—		
Tide Water Associated, Pinkston 28 (134-ac)	3600	3814
Kilgore Area—		
Starnes et al (was Lansberry, Rec.), Money 34	2400	3711
Longview Area—		
Atlantic, Sheffield 9 (49.06-ac)	7000	3673
Dallas County (Wildcat)—		
Mauldin Oil Co., Howell 1	*	2500
Falls County—		
Gurley Oil Co., Davis 1	*	1165
Leon County (Navarro Crossing)—		
Humble-Sun, Swift-Henry 2 (1300-ac)	*	5861
Limestone County (Wildcat)—		
W. C. McGlothlin & Zephyr Oil Co., Adams 1	*	3729
Navarro County (Corsicana-Powell)—		
Sitton et al, Fleming 1	†	1495

*Failures; †Junked; ¶Million cu. ft. gas.

Asks revision of Luby proration rules

The Texas Railroad Commission has been requested to revise its method of allocation for the Luby field, Nueces County. McCurdy Brothers with two wells in Petronilla Creek were joined in the application by the State Board of Mineral Development, from whom their lease was obtained.

Testimony presented by the applicants was intended to show that a well in the field did not drain 20 acres. Evidence presented by other operators, however, showed that the oil moves freely through the field and that pressures were sufficiently high to enable the oil to move across a 20-acre strip.

The requested change would increase the allowable for wells in the Creek.

Turner Valley-Fort William line report in October

Results of the investigation of Dr. Charles Camsell, deputy federal minister of mines and resources, relative to the feasibility of constructing a crude-oil pipe line from Turner Valley, Alberta, Canada, to Fort William, at the head of the Great Lakes, or to Vancouver, British Columbia, will not be known before October, the Alberta lands and mines department announced last week.

The results of Dr. Camsell's study will be submitted to the Dominion government at Ottawa, and to British agents who have been interested in the proposal.

Chicago gas rate hearing transferred to Washington

Hearings on pipe line rates of Natural Gas Pipe Line Company of America and Texoma Natural Gas Company, launched by the federal power commission on petition of the Illinois Commerce Commission, were shifted last week from Chicago to Washington. The companies, whose rates the Illinois commission charges are unreasonable, supply all the natural gas sold by the Peoples Gas Light & Coke Company and other utilities serving the Chicago area.

Keensburg, Illinois line to be built immediately

Manley Oil Corporation has obtained right-of-way for a 25-mile 4-inch crude-oil pipe line to link the Keensburg area of Wabash County, Illinois, to Maud, near Lawrenceville, where it will connect with the Southern line. Construction of the line is to start immediately. The company operates a system of pipe lines in the Centralia area of Marion County.

Southwest Texas Fields

Second oil sand showing in Ben Bolt, Jim Wells County. New sands apparent in Angelita and East Plymouth areas.

Corpus Christi.—Ben Bolt, one of Jim Wells County's newest Frio- Vicksburg sand producing areas, was revealing its second oil sand late in the week. Graham Brothers' M. W. Smith 1, 1474 feet east of the discovery, is drilling plugs preparatory to perforating casing in sand at 5398-5409 feet. On a drill-stem test at 5398-5405 feet, 60 feet of oil and 650 pounds pressure were recovered in 8 minutes. The well previously had flowed oil under 145 pounds pressure on a drill-stem test of the regular sand at 5268-75 feet.

One gas well was completed at about the same level as the new pay in an operation 1 mile north of production. The discovery of the new sand as an oil producer is expected to bring about an extensive drilling program.

A mile southwest of production, Pat Rutherford and Royal Oil & Gas Company have commenced Garcia 1 in the northern portion of a 1351.6-acre tract in the La Trinidad Grant.

Magnolia Petroleum Company apparently placed the La Gloria field of Jim Wells County in the major producing class September 1 when D. O. Maun 1 showed for an oil producer in sand at 7220-30 feet. On a drill-stem test of the zone, 2250 feet of pipe line oil rose into the hole in 25 minutes. Pressure totaled 37 pounds during the test. The well is bottomed at 7233 feet in shale and may be carried ahead to test lower levels.

The well is in Lot 6 Block 11, 1 mile west of the distillate discovery and only other producer. The field was opened in March by Magnolia Petroleum Company's Sam Maun 1, which flowed from perforation at 6560-70 feet. It had been carried to 7545 feet, but failed to make a producer in the lower sand.

This discovery is important as it leads the way to a heavy drilling program in the area. Among the companies holding leases in the general vicinity are R. P. Brewer, Fidelity Oil & Royalty Company, Ohio Oil Company, Trio Oil Company, Tide Water Associated Oil Company, Phillips Drilling Company, Magnolia Petroleum Company, Sun Oil Company, Shell Oil Company, Sinclair Prairie Oil & Gas Company, Donald Clark, Dan Auld, Willis Storm, and others.

C. E. Heard and I. W. Keys' Driscoll 1, northeast of the Bandera field, also in Jim Wells County, has been abandoned at 7031 feet. It found sand 6768-80 feet where the test attempted to blow out.

Pure Oil Company is commencing its third well on the Bird Islands prospect. State 1-171, 11,500 feet northeast of the discovery of this submerged area in Kleberg County.

Humble Oil & Refining Company has extended the extension area of the West Ranch field, Jackson County, nearly ½ mile to the east with Vanderbilt-State 1-A, in Menefee Lake No. 1. After perforations had been made at 5500-5 feet, it flowed at the rate of 19 barrels per hour through ¼-inch choke under 500 pounds tubing and 1000 pounds casing pressures. In the meantime, Magnolia Petroleum Company commenced another test in an effort to extend the field. It is West 21-A, 2250 feet east of nearest production.

An extension of 1 mile to the southwest and the opening of Frio sand production in the East Plymouth field, San Patricio County, appeared likely in Republic Natural Gas Company and Byron Rife's A. A. Galler 1. The well, located in Section 26, found the sand at 5110-36 feet and perforations were made at 5111-13 feet. It flowed several million cubic feet of gas per day with a good oil odor through ⅛-inch choke. Pressures were 1800 pounds on tubing and 1850 pounds on casing.

Wellington Oil Company was attempting to open an oil sand at 6225-35 feet in J. F. Welder Heirs 6, in the Angelita area of San Patricio County. Hole had been carried to 7042 feet, then plugged back.

Nueces and Refugio counties provided several disappointments. In Nueces County, The Texas Company's Rutland 1, 1¼ miles east of the South Clara Driscoll field, was stopped at 6722 feet, while Transwestern Oil Company and Trinity Drillers, Inc.'s R. H. Wood 1, near Woodsboro in Refugio, was carried to 7010 feet.

Mission.—Sal Vieja Oil Corporation and Pure Oil Company have commenced the second well on their block in the extreme southern portion of Cameron County. Gatewood Newberry 1 is projected to 10,000 feet.

Magnolia Petroleum Company is preparing to commence a second well on its M. M. Garcia block northeast of the Barbacoas field in Starr County. The first well attempted to blow out near 6000 feet, apparently in the Yegua, but failed to make a commercial producer. The new well, in Porcion 90, likely will be northeast of the prior operation.

Live Oak County well testing in Hockleyensis

Beeville.—Production test was being made in Hockleyensis sand at 2126-48 feet in Sal Vieja Oil Corporation et al's Jesse G. Riser 1, Moore Survey No. 382, about 15 miles southwest of George West in Live Oak County. The well went to 3010 feet and has been testing up the hole without success. It originally had made a small pumper at 2152 feet, but was drilled to its contract depth.

Emmert and Tsesmelis et al's O. F. West 1, Douglass Survey, ½ mile east of Papalote in Bee County, has been abandoned at 6005 feet.

In DeWitt County, Marshall Purviss et al's Afflerbach 1, southeast of Yorktown, was reportedly below 6400 feet. It is being carried as a closed hole, but reports say it is checking high. Another test projected to the Sparta-Wilcox in this general area is Midway Oil & Royalty Company's Schumaker 1, 3 miles north of Sublime.

San Antonio.—Efforts to establish production in the Trinity in the Staples area of Guadalupe County, were of no avail. Lincoln Petroleum Company abandoned R. P. Lowman 1 at 3175 feet. It topped the Austin chalk 1187 feet, Edwards limestone 1248 feet, Trin-

South Texas Completions

CORPUS CHRISTI DISTRICT

Company, Well and Location	Init. Prod. Bbls.	Depth
Bee County—		
Dirks & Richardson, West 1 (WC), James Douglas sur	*	6005
Brooks County—		
Humble, McGill 20 (Kelsey)	350	4727
Jackson County—		
Crown Central, Foust 5 (Cordelle)	450	2653
Humble, Vanderbilt-State 1-A (WC) Vanderbilt-West Ranch	800	5674
Magnolia, Drushell 7 (Cordelle)	*	2725
West 15-A (Vanderbilt-West Ranch)	500	5335
West 17-A (Vanderbilt-West Ranch)	700	5549
West 18-A (Vanderbilt-West Ranch)	500	5117
Jim Wells County—		
Bradstreet, Rehment 1 (WC) Phillips survey	*	5273
Heard & Keys, Driscoll 1 (WC), Las Animas Sola gr	*	7031
Kilgore, Mosser 1-A (Reynolds)	500	5205
Smith, McGhee 1 (WC), Reynolds area	*	5621
Live Oak County—		
Coquat, Moss 1 (WC), section 29	*	1746
Nueces County—		
Agua Dulce, Gee 2 (Agua Dulce)	¶10 & 100	4900
Awoeb, Bock 3 (Minnie Bock)	350	3828
Southern Minerals, King 3-A (Richard King)	300	5402
The Texas, Rutland 1 (WC), South Clara Driscoll area	*	6722
Texas Gulf Minerals, Humphrey 2 (Saxet)	¶10 & 100	6915
Union, Simmonds 5 (North Agua Dulce)	¶10 & 100	4803
Refugio County—		
Transwestern & Trinity, Wood 1 (WC), Dona Anastacia Rejos sur	*	7010
Victoria County—		
Barnsdall, McFaddin 33 (McFaddin)	350	4416
Mayo, Weaver 1 (WC), Diego Garcia sur	*	6010

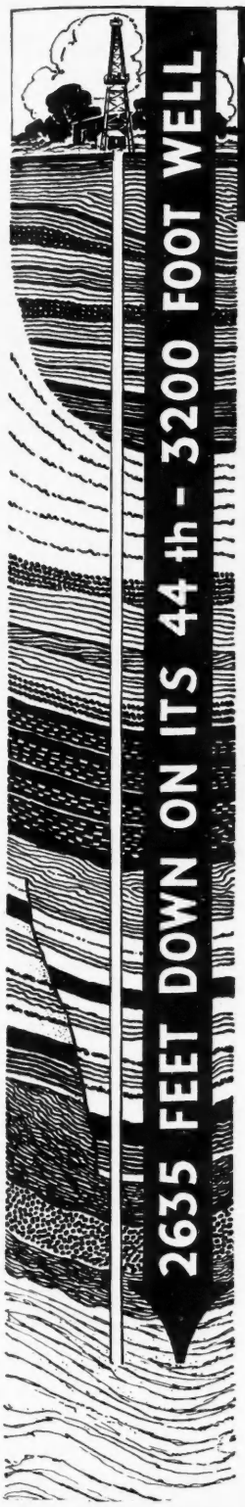
LAREDO DISTRICT

Duval County—		
Argo, Fee-Rodden 8 (Hoffman)	608	2637
Benedum-Trees, Puig 21 (North Sweden)	450	4761
Cox & Hamon, Hoffman 11 (Hoffman)	77	2905
Dutex, State 12 (Piedre Lumbre)	*	2215
Longhorn, Miller 8 (Longhorn)	500	4906
Magnolia, DCRC 35 (201) (Piedre Lumbre)	150	2138
Well 42 (Hoffman)	20	2834
Transwestern, DCRC 26 (297) (SRC)	74	1043
Jim Hogg County—		
Humble, Atwood 6 (Colorado)	350	3078
La Salle County—		
Garner, Yeager 6 (WC), J. T. Doswell	*	1064
McMullen County—		
Jones, Ezzell 98 (South Callihan)	*	1523
Starr County—		
Aid, Garcia 1 (WC), Carmargo Juris, Por 71	Lcn.	Abnd.
Bass, Lester 1 (North Ricaby)	100	1437
Webb County—		
Basom, Adami-Bennett 1 (WC), H&GN sur No. 335	*	1278
Purnell, Gates 1 (WC), 2 mi nw Leaseholders pool	*	1709

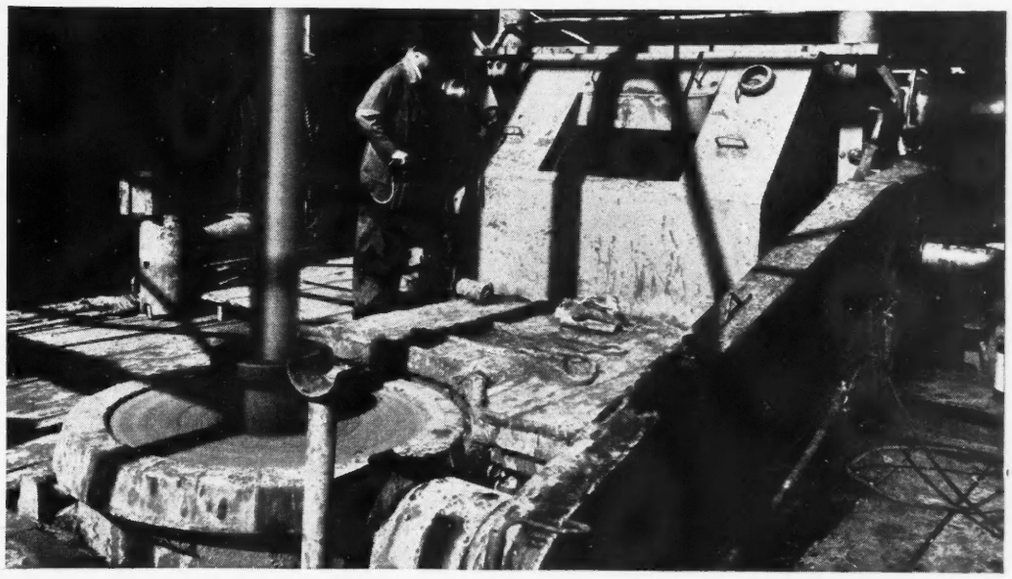
SAN ANTONIO DISTRICT

Caldwell County—		
Weigand, Briscoe 7-A (Salt Flats)	75	2725
Guadalupe County—		
Bluehawk, Fee (Richburg) 2, (Darst Creek)	75	2590
Lincoln, Lowman 1 (WC), (Staples)	*	3175
Medina County—		
Walker, Zuerbueler 2 (WC), (Dunlay)	*	462
Milam County—		
Cloud, Tr., Henniger 1 (WC), Robertson sur	*	3169

*Failures; †Junked; ¶Million cu. ft. gas.



THIS HOIST STILL USES ITS ORIGINAL THERMOID BRAKE LINING



Simple multiplication shows that this hoist has drilled a total of 140,235 feet . . . and the same set of Thermoid Brake Lining with which the hoist was equipped originally assisted in drilling every foot.

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ity 3035 feet, elevation being 527 feet, derrick floor. The well was on the west side of the field and cut a fault considered to have a throw of 450 feet.

Two Duval County fields get slight extensions

Laredo.—A slight extension and second producer for the Muralla field of Duval County by J. B. Blanchard in Atlee Parr 2, found broken sand section from 4677-4744 feet in the Pettus zone and showed gas with some oil. On the last test at 4729-44 feet, 440 feet of oil and 110 feet of salt water were recovered under 225 pounds pressure in 25 minutes.

Hiawatha Oil & Gas Company provided a slight southeast extension in the second producer for the Pettus sand producing Southland field of Duval County. From perforations at 5300-8 feet, it flowed gas and distillate through 5/32-inch choke. Pressures stood at 1550 pounds on tubing and 1600 pounds on casing.

Hawkins & Howell's Garcia 1, south of the discovery of the Chiltipin field and second test in the area, was reworking again after making mostly gas.

Shreveport.—Union Producing Company will drill three salt water disposal wells in the Rodessa field, having secured permission for the three from Rodessa Oil and Land Company. They will be located in N½ SE and S½ NE 15-23n-16w, Caddo Parish. The salt water coming from the Glen Rose horizons around 6000 feet will be injected into a shallow sand.

Texas Gulf Coast

South Houston outpost has oil sand at advanced depth. Washington County wildcat projected to go to Wilcox

Houston.—Stanolind Oil & Gas Company's Staiti 1, an outpost of South Houston field in Harris County was waiting on cement to set at the end of the week. This well, situated about 2000 feet north of production, has found an oil sand at 7553-72 feet, considerably below established producing horizons of the field. On a preliminary test it flowed considerable fluid, 40 percent of which was oil. Ordinarily, production at South Houston is found in Frio formation, topped around 6800 feet. This test indicates a possible 2000-foot extension north as well as a new sand.

Efforts of Republic Production Company and Houston Oil Company thus far having been accompanied by only nominal success in Tyler County, the combine has decided to go after Sparta Wilcox production there. Therefore, their Hurd 25 will be drilled as a Wilcox-Sparta test soon in the Norman Hurd league.

In the Martha field of Liberty County, Stanolind Oil & Gas Company's Seaberg 2, indicated it would flow commercially from 8092 feet and was shut in.

On the old Hillje prospect, Wharton County, The Texas Company, which has been active there for several months, was swabbing Peters 1 after perforations at 5237-43 feet failed to yield commercial results.

Mount Selman Oil Company is preparing to test Wilcox formation oil producing possibilities northeast of Brenham in Washington County. Pits are being dug on a location 300 feet from the west line and 1650 feet from the north line of a 127.7-acre tract on the Fuelberg holdings in the J. W. Lightfoot Survey. Spudding is scheduled for September 14.

J. R. Turnbull, who has been attempting to bring in production from Shepherd 1, Cedar Bayou area of Chambers County, probably will pull screen and reperforate at 6421-65 feet after swabbing without desired results.

Possibility that Louise field, Wharton County, will extend farther north was indicated late in the week when Brazos-Young Corporation's Macha 1 yielded 18 barrels in 5 hours with casing set at 5120 feet, above a producing horizon between that depth and 5142 feet, bottom of the hole.

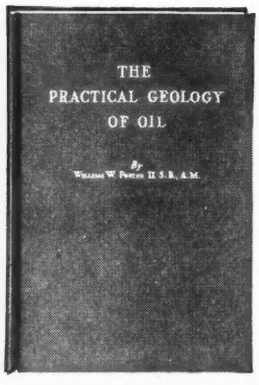
More than a score of wells, inside locations and possible extensions or discovery wells of new sands, were scheduled for completion in this territory during the week, but work was held in abeyance in many areas due to the shutdown ordered by the Texas Railroad Commission. Hence, next week's list of completions may be expected to be unusually heavy.

Texas Gulf Coast Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Clear Lake—		
Stanolind, G. M. Snowden 2	546	5849
Clodine—		
R. N. Ranger, Blakeley 1	*	8017
Fairbanks—		
Amerada-Stanolind, Spaulding 5	128	6843
White 16	92	6852
Johnston & Johnston, T. Roberts 2	165	6831
Hardin—		
Atlantic Ref. Co., Rives 2	80	7557
Hastings—		
Stanolind, Moore C-19	241	6105
Hull—		
Republic, Dolbear 132	72	2821
Port Neches—		
The Texas Co., Starks 8	360	5934
South Bay City—		
Atlantic, R. H. Glover 1	75	....
South China—		
Magnolia, Broussard Trust 1	34	7810
Thompson—		
H. M. Naylor, Booth B-4	*	8150
Turtle Bay—		
Stanolind, State 39-1	*	6701

*Failures; †Junked; ¶Million cu. ft. gas.

Tulsa.—Oklahoma completed 40 wells during the past week, 22 for oil wells making a total initial potential of 2401 barrels daily and 3 gas wells good for 13,100,000 cubic feet of gas per day. Fourteen failures were recorded and 1 location abandoned. Wells staked dropped off with only 23 first reports. Jackson County led with 5, followed by Pottawatomie County with 4, Pontotoc and Stephens 3, Okmulgee, Seminole and Creek 2 each, Carter and Comanche 1 each.



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South Louisiana

Woodlawn, Jefferson Davis Parish, gets major extension.

West Gueydan showing for production in another sand.

Lake Charles.—Lafourche Crossing, Lafourche Parish, may be the next new oil field for this district, as Miketon Oil Company's Martinez 2 is said to be making a drill-stem test at 10,140 feet after setting liner from 9000 feet to bottom at 10,400 feet.

Woodlawn field of Jefferson Davis Parish received a major extension when Union Sulphur Company's Johnson 1, was reported completing at 9475-87 feet. The well is ½ mile west of production.

It begins to look as though the relatively new West Gueydan field in Vermilion Parish may have another sand as a result of showings in Magnolia Petroleum Company's Ferguson 3, the third test for the field. This well logged sand at 6967-80 feet.

Already reputed the deepest test in the area, Housh and Thompson's Flose 1, White Castle area, Iberville Parish, may be drilled to 12,000 feet. When the test had passed 10,611 feet no showings of commercial significance had been reported.

Among the relatively important wells scheduled included in completions tabulations is Continental Oil Company's P. W. Miller 2, Tepetate field of Acadia Parish, a test which did 145 barrels through a 5/32-inch choke when brought in from sand perforated at 8182-85 feet. Tubing pressure on this exceptional completion was 800 pounds; casing pressure, 1100 pounds.

Amerada Petroleum Corporation also recorded a worthwhile completion in finishing William Glase et al 1 in Eola field of Avoyelles Parish from perforations at 8383-8505 feet for an initial yield estimated at 160 barrels in 9½ hours. Tubing pressure was 1800 pounds; casing pressure, 1900 pounds. The oil, which had a gravity of 43.3, was accompanied by a flow of 187,000 cubic feet of gas.

In the same field, this company listed as a producer Mrs. C. B. Marchive 2, a project perforated at 8388 to 8505 feet to obtain an initial production of 375 barrels of pipe line oil testing 42.3 gravity.

Forty-four permits for Louisiana

Forty-four drilling permits were issued last week by the Louisiana Conservation Commission of which 10 were in North Louisiana divided among the following parishes: Bossier 1, Caddo 6, Morehouse 1, and Webster 2. The 34 in South Louisiana were divided among the following parishes: Avoyelles 3, Beauregard 1, Calcasieu 1, Cameron 2, East Baton Rouge 2, Iberia 1, Jefferson 1, La Fourche 15, Plaquemines 1, St. Landry 1, St. Mary 5, and Terrebonne 1.

South Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Abbeville—		
Continental, L. Duhon 1	26	10,535
Charenton—		
Pan American, Veeder 18	*	1294
St. Mary Oil Co., Achee 3	246	1120
Achee 4	215	1120
Eola—		
Amerada, Wm. Glase et al 1	160	8520
Mrs. C. B. Marchive 2	375	8530
Gillis—		
Union Sulphur Co., Castle 9	56	7128
Little Bayou—		
Acadian Prod. Co., Weeks et al 1	*	1119
Port Barre—		
Pan American, Haas-Hirsch 3	*	7203
St. Martinville—		
Housh & Thompson, C. E. LeDoux 1	*	5842
Tepetate—		
Continental, P. W. Miller 1	145	8304
Rapides Parish—		
T. D. Humphreys, J. J. Kreze 1	*	5050
Vernon Parish—		
N. Hunter, W. T. Burton 1	*	6512

*Failures; †Junked; ¶Million cu. ft. gas.

Francitas gas/oil ratio request

British American Oil Company has requested the Railroad Commission to fix a gas-oil ratio allowance of 12,500/1 for

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wells in the Francitas field, Jackson County. The request made at the hearing before the commission last week was unopposed.

High pressures and large volumes of gas produced with the oil were given as the basis for the request.

Muskogee lease sale

Muskogee, Okla.—The Five Civilized Tribes will sell at public auction, September 6, at 10 o'clock, oil, gas, coal and asphalt mining leases as announced by A. M. Landman, superintendent of the agency.

Leases included are in the following counties: Nowata, Tulsa, Creek, Wagoner, Muskogee, Okmulgee, Okfuskee, Hughes, Seminole, Pontotoc, Garvin, Stephens, Jefferson, Carter, Love, Marshall, McCurtain, Haskell, and Pittsburg. Total acreage involved is 4359 acres.

Twenty-acre spacing for South China

The Texas Railroad Commission has entered an order providing for 20-acre spacing in the South China field, Jefferson County. Wells may be spaced within 330 feet of lease lines but must be 933 feet apart.

Proration is on acreage and potential with 50 percent allocated to each factor, and as much as 30 acres may be allocated to the final well on the lease.

The rules make no provision for surface casing, but the oil string must be cemented 2000 feet above the shoe. The maximum gas/oil ratio allowance is 2000:1 with a total displacement factor.

North Louisiana Fields

Set casing for test on Lake Bisteneau extension. Deep tests progressing in Caddo, Claiborne and Caldwell.

Shreveport.—Changing original plans to abandon at total depth of 5667 feet in Travis Peak, Union Producing Company Thursday was running a string of 5½-inch casing in Lincoln Land Company 1, C W½ 17-16n-10w, Bossier Parish, one mile west of production in the Lake Bisteneau field, Bienville Parish. The well was reported to have failed to show anything in the Pettet (basal Glen Rose) lime, but plans now are to test this horizon after casing is set in the hope of getting at least a small gas well.

Longwood Oil and Gas Company ran electrical logging device to 3010 feet in Belcher and Vaughn 1, located 3306 feet west and 1980 feet south of NEc 28-20n-12w, Bossier Parish wildcat test.

Prairie River Syndicate's Hutchinson 2, NE NE 3-15n-12w, proposed 9000-foot wildcat test in Caddo Parish, drilled at 4520 feet after logging top of massive anhydrite at 4130 feet, 125 feet higher than the same company's Hutchinson 1, Section 15-15n-12w, 9000-foot test that was abandoned after showing some gas in the lower Marine. Location is on the southwest flank of the shallow Elm Grove field.

Lisbon Exploration Company's Roberta Vaughan 1, NE NW 36-21n-5w, proposed lower Marine test in the Lisbon field, Claiborne Parish, drilled at 5905 feet. One mile northeast of production at Bear Creek, Bienville Parish, Hunt Oil Company's Southern Advance Company 1, located 300 feet east of C 36-17n-6w, drilled at 7874 feet. In Caldwell Parish, Arkansas Fuel Oil Company's deep geophysical wildcat test, Louisiana Central Lumber Company 1, Section 31-12n-3e, drilled in lime and shale at 4750 feet.

Stanolind Oil and Gas Company's deep test in the old shallow Pine Island field, Caddo Parish, Dillon Heirs 131, C SE NE 14-21n-15w, cored at 7220 feet.

Two wells were completed in the Cotton Valley field, Webster Parish.

North Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
La Salle Parish (Wildcat)—		
Hunt Oil Co., La. Cent. 8, 19-11n-4e	*	2047
Webster Parish (Cotton Valley)—		
George Barham, Merritt 1, 14-21n-10w	50	5960
Stanolind, Pardee Co. 2, 25-21n-10w	400	8379

*Failures; †Junked; ¶Million cu. ft. gas.

'Petroleum Facts and Figures' sixth edition issued by A.P.I.

The 1939 sixth edition of "Petroleum Facts and Figures," a 192-page book covering operations of the petroleum industry in all its branches, has been published by the American Petroleum Institute's Department of Public Relations. The new edition brings up to date all data in the 1937 fifth edition, and adds approximately 50 new or completely revised tables. As far as possible all usable new data available up to August 1, 1939, are included.

The 215 tables in the sixth edition are distributed under seven chapter headings: utilization, production, refining, transportation, marketng, prices and taxaton, and general. All tables, as nearly as possible, are in logical order under each chapter, to make the book in large measure self-indexing. A complete subject index, however, makes it easy to find specific facts.

In addition to the tabular material, important petroleum-industry lists are given in an appendix: directors, officers, and complete commttee roster of the American Petroleum Institute; list of government petroleum statistical and regulatory agencies; a directory of petroleum and allied associations; a directory of petroleum-company house organs; and a list of publications of the American Petroleum Institute.

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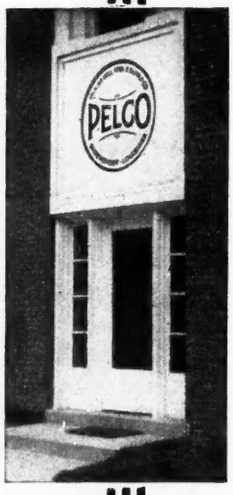

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previous edition. Time-series tables from the fifth edition are continued for years subsequent to 1933, with page references to prior data in the fifth edition.

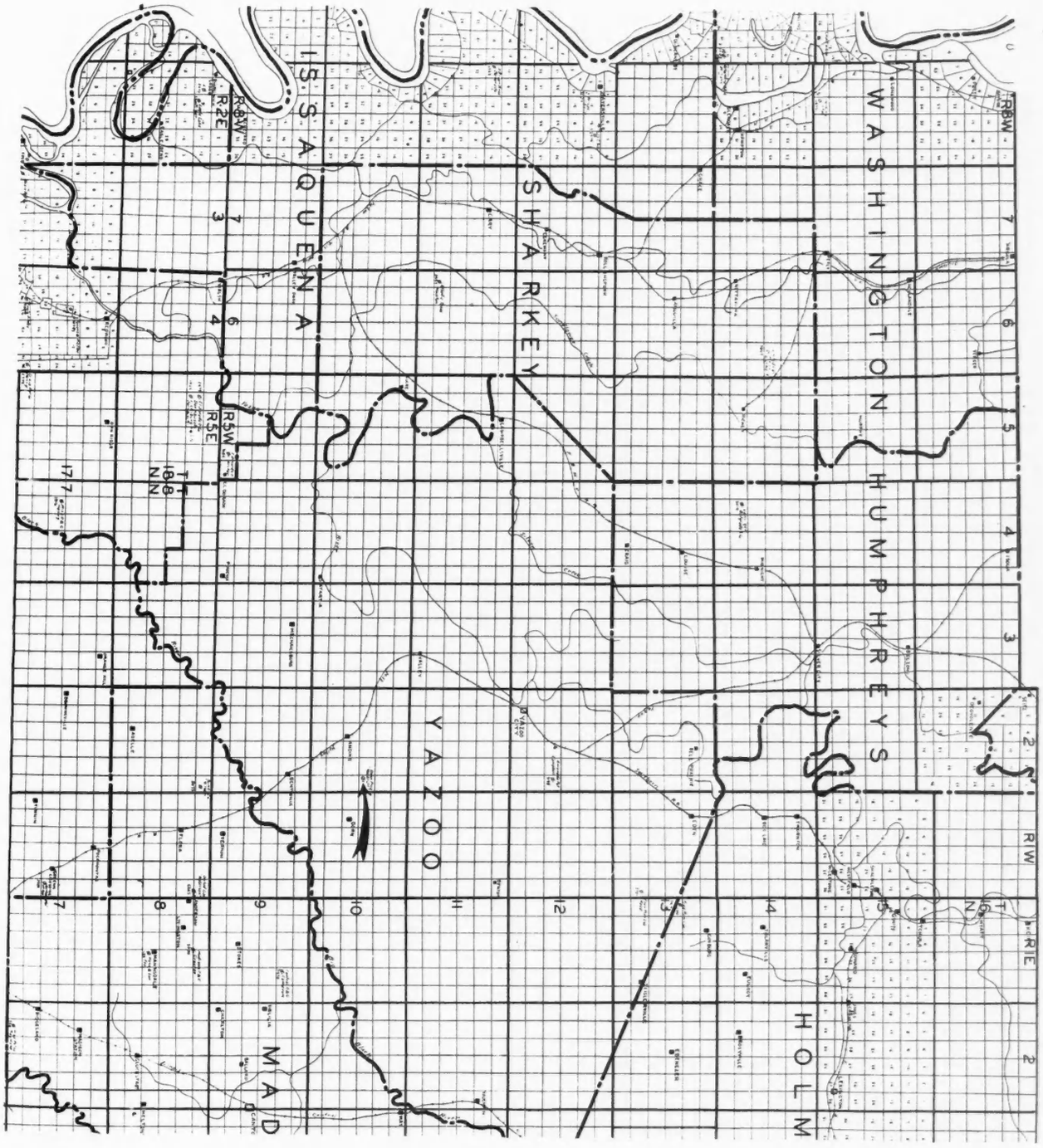
Copies of the sixth edition, paperbound and illustrated by Pictorial Statistics, may be obtained from the American Petroleum Institute, New York. Price of the new edition is $1.00.

Mississippi Developments

Yazoo County well indicates commercial oil on drill test. Plan early test of showing found on geophysical prospect.

Jackson, Miss.—First commercial oil production in the State of Mississippi appeared assured last week, when Union Producing Company's Woodruff 1, in 13-10n-4w, Yazoo County, made 3800 feet of 32.8 corrected gravity oil in a 15-minute drill-stem test at 4540-60 feet. The test was made with ½-inch chokes on top and bottom, and showed 1500 pounds working pressure. Preparations are being made for an early gauge of the well.

The drill-stem test indicates this is to be the first oil of consequence in



Map shows section of northwestern Mississippi and location of Union Producing Company's strike in Yazoo County. (Map courtesy Globe Map Company, Shreveport.)

the state. A few wells on the south flank of the Jackson gas field showed black asphaltic oil of 13 gravity several years ago. In October, 1931, Gulf Refining Company drilled a test in Clark County, east central portion of Mississippi, that showed for about five barrels of oil daily in the Eutaw (Blossom) sand, and the same company drilled a test later in Pearl River County that had some showings. More recently, Sun Oil Company found some heavy oil showings and definitely proved the existence of a salt dome.

The entry of Mississippi into the oil producing ranks of the nation need not cause the industry worry that the acute Illinois open flow situation may be repeated. In the first place, Mississippi has a comprehensive oil and gas conservation statute. The act of 1932 empowers a State Oil and Gas Board to adopt and promulgate rules and regulations necessary for the conservation of gas and oil, and the supervision of drilling, deepening, abandonment and production operations. Permits to drill are issued through the board. Moreover, possibilities of an immediate large-scale drilling campaign at the new strike appear slight, as Union Producing Company holds a large and fairly solid block around the well.

The location of the Union Producing Company strike is on a geophysical prospect, known locally as Tinsely Dome, found last spring. With a derrick floor elevation of 175 feet, the test logged top of the black shale at 3602 feet and top of the Midway chalk at 4429 feet. Drill-stem tests at 4437 feet found no oil. The Midway chalk, at 2400 feet, is the gas producing formation in the Jackson field, 35 miles to the southeast. The oil strike is 9 miles south of Yazoo, in the delta section of the state.

It is certain that northern Mississippi is to receive additional attention as a result of the Woodruff indications, and what such activity will discover only the future can determine. In recent months there has been much leasing and geophysical exploration in the Alabama Basin of northwestern Alabama, and in northeastern Mississippi.

Arkansas Fields

Columbia County wildcat opens new Permian area

El Dorado, Ark.—The fifth Smackover (Permian) lime oil field for Columbia County was opened last week when Atlantic Refining Company's Pinewoods Lumber Company 1, NE NE 16-18s-22w, geophysical wildcat prospect at Experiment, was completed at 9002 feet, flowing 22 barrels of 43.5-gravity oil per hour through 18/64-inch tubing choke after 5½-inch casing, set on bottom, was perforated from 8861-75 feet with 56 shots. There was no salt water.

Flowing for 6 hours through 18/64-inch choke with 750 pounds tubing pressure, and 1150 pounds casing pressure, the well averaged 22 barrels of oil per hour and later flowed 13 barrels per hour through 12/64-inch choke with tubing pressure 1325 pounds and casing pressure 225 pounds. Estimated gas/oil ratio was 1000 to 1.

Production is coming from the Reynolds stratum of the Smackover lime series which is the third and lowest producing stratum at Schuler, Union County. With elevation of 220 feet the new well topped Buckner anhydrite at 8756 feet and picked up the Smackover lime at 8807 feet, the Reynolds stratum being logged at 8814 feet, which was top of the porosity, the next 15 feet showing gas and distillate in cores. Core analyses below that depth showed gas and distillate and lower oil stains were logged. Dense lime was logged at the bottom of the hole.

Electrical log run before casing was set showed 10 feet of saturation in what corresponds to the Bodcaw or "E" sand at Cotton Valley, Louisiana, at 6950-60 feet, and also in the same series another core at 7043-50 feet showed oil. The test logged massive anhydrite from 4050 to 4230 feet and the Hill stratum of the Rodessa (Glen Rose) series was topped at 4352 feet and the Gloyd stratum of the same series at 4546 feet. Lower Marine (Cotton Valley) was topped at 6415 feet.

The present well was a cooperative effort on the part of several companies, including Gulf Refining Company, Shell Oil Company, and Lion Oil Refining Company.

Standard Oil Company of Louisiana's Nancy Johnson 1, SW SE 9-16-22, one mile east of production at Buckner, Columbia County, Thursday was flowing 10 barrels of oil per hour through 13/64-inch choke after 3000 gallons of acid was used. Total depth is 7272 feet in the Smackover lime. It is the first major extension of the Buckner field and is the area's fifteenth oil well. For the first two hours after being opened following acidization, the well flowed 45 barrels of oil per hour through open tubing with tubing pressure 260 pounds and casing pressure 100 pounds. Gas-oil ratio was 351 to 1.

Another Smackover lime geophysical wildcat prospect also was of much interest last week, this being Lion Oil Refining Company's Annie 1, Section 29-15-17, Ouachita County, which logged a showing of oil near top of the Smackover lime. Total depth is 5654 feet and operators Thursday planned to run formation tester after three cores were taken below 5640 feet, top of the lime. Top of Buckner lime was 5394 feet and top of the lower Marine (Cotton Valley) was 4095 feet. Location is on the west flank of the old shallow Smackover field, about four miles outside the producing limits of the shallow field.

Lion Oil Refining Company was also testing its Hill 1, Section 6-18-13, semi-wildcat in Union County just outside the Urbana field. The test was showing some gas after casing was perforated at 2674-77 feet in the Graves sand, one of the producing horizons at Smackover and recently found productive of oil in one well at Rainbow City, Union County. The well showed casing pressure of 680 pounds on casing with tubing pressure not gauged. Total depth is 4601 feet. It was testing through 1/16-inch choke.

Arkansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Columbia County (Wildcat)—		
Atlantic, Pinewoods 1, 16-18-22..	528	9002
Columbia County (Magnolia)—		
Phillips, Walthall 1, 24-17-20....	450	7717
Walthall 2, 15-17-20	420	7732
Longino 2, 15-17-20	341	7675
Southwood Oil Co., Johnson B-1, 22-17-20	420	7640
Union County (Smackover)—		
Bob Milam, Primm 1, 1-16-16	¶1	2284
Union County (Schuler)—		
Lion O. R. Co., Justiss 2, 7-18-17..	200	7700

*Failures; †Junked; ¶Million cu. ft. gas.

Production holiday boosts pressures in Arkansas fields

El Dorado, Ark.—Tests taken during the August shutdown period by the Arkansas Oil and Gas Commission reveal that bottom-hole pressure increased in 5 of the 6 prorated fields shut down and that the decline in the sixth field was sharply reduced.

The report follows:

Atlanta Field—Sixty pounds increase. Comparative pressures based on tests taken August 10, 1939, field having been closed in 7 days when pressure was taken.

Buckner Field — Twelve-pound decrease. Comparative pressures based on tests taken July 17, 1939. Field had been closed in 1 day when pressure was taken. This field had decreased 47 pounds last period between pressures.

Magnolia Field—Seventy-nine pounds increase. Comparative pressures based on pressure taken July 19, 1939; field had been closed in 7 days when pressure was taken.

Schuler Field (Reynolds Lime)—Seventy-eight pounds increase. Comparative pressures based on pressure taken July 13, 1939, field having been closed in 6 days when pressure was taken.

Schuler Field (Jones Sand)—Eight pounds increase. Comparative pressures based on pressure taken July 13, 1939, and after field had been closed in 6 days.

Village Field—Ten pounds pressure increase. Comparative pressures based on tests taken July 17, 1939, and after field had been closed in 4 days.

The weighted average bottom-hole pressure at Buckner, Columbia County, was 2880 pounds August 18 as compared to 2892 pounds on July 17. Eleven wells had the pressures taken.

The average reservoir pressure in the Magnolia field, Columbia County, on August 24 was 3437 pounds compared to 3358 pounds last July 19. Pressures were taken on 7 wells.

The weighted average reservoir pressure in the Jones sand wells at Schuler, Union County, on August 23 was 2446 pounds as compared to 2438 pounds July 13, pressures being taken on 18 key wells.

The average reservoir pressure on the Reynolds (Smackover) lime wells at Schuler, Union County, August 24 was 3470 pounds as compared to 3392 pounds on July 13, 4 key wells being used.

Arkansas permits

El Dorado, Ark.—Two drilling permits were issued last week by the Arkansas Oil and Gas Commission, as follows: Clark County — William S. King, H. Ross 1, located 640 feet south and 395 feet west NEc S½ SW 3-10-21; Columbia County—Shell Oil Company, W. F. Merritt 1, located 660 feet south and west NEc NE SW 15-17-20.

New Mexico Fields

Lovington extension west will require many offsets

Hobbs, N. M.—Western extension given the Lovington pool, Lea County, by L. H. Wentz et al's State 1-A, C SW SW 36-16s-36e, provides the key well to force the progressive drilling of all inside locations within the area, which extends 2 miles north and south with a maximum width of 1¼ miles. This outpost logged broken pay at 4665-4980 feet, and swabbed 330 barrels of oil in 26 hours in developing a natural flow. Later gauge credited the well with flowing 110 barrels in 22 hours through various size chokes. Direct offsets created by this well increases the total pending for the pool to 15.

Plugback operations on Coastal Development Company's Caylor 1, NW NW SE 6-17s-37e, a southeast outpost, failed to exclude water, which was encountered in drilling to 5005 feet. The well swabbed 31 barrels of fluid, averaging 50 percent water, after using acid at a plugged back depth of 4785 feet. Location is a Phillips Petroleum Company farmout.

Lea County accounted for 5 new operations the past week despite the production shutdown, which was terminated September 1 as originally scheduled. Working stocks of crude held by the purchasers were materially reduced during the holiday. This condition may result in operators being given a market for authorized back allowable due over a period of months because of the failure of pipe line companies to run the full proration quota.

In the Eunice Townsite sector of the Hardy field, Magnolia Petroleum Company's Carson 7, C NE NW 33-21s-37e, flowed 100 barrels initial after 260-quart nitro shot at 3650-3780 feet, but casing parted at 1534 feet. The company has made location for Carson 8, a south offset. Gulf Oil Corporation's McCormack 8, C SE NE 32-21s-37e, is also a new authorization for the area.

Leonard Oil Company has been assigned a 40-acre lease by Skelly Oil Company in the Langlie field for the drilling of a test to be Johns 1, C NE NE 20-25s-37e.

Development in the Vacuum field has settled to routine offsets, excepting Magnolia Petroleum Company's State-Bridges 40, which is seeking a 1980-foot northwest extension from the discovery completion, and was drilling at 4185 feet. The original well has remained the most northly test although it was completed in July, 1929. New operations for the field includes Humble Oil & Refining Company's State 9-K, C SE SW 28-17s-35e, and The Texas Company's State 10-O, C SW SE 36-17s-34e.

In the Loco Hills field, Eddy County, Continental Oil Company and S. P. Yates' Travis 1, SEc 3-18s-29e, swabbed 66 barrels of oil and 344 barrels of water on 18-hour test after 160-quart nitro shot at 2590-2670 feet. It was plugged back from 3002 feet after failing to encounter a deeper pay.

New Mexico Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Eddy County—		
Franklin Pet. Co., Yates 1-A, nw nw nw 6-18s-30e	960	2810
Premier Pet. Corp., Beeson 2-F, sw sw sw 31-17s-30e	120	2792
Underwood & Sanders, Guy 1, sw nw nw 10-18s-29e	552	2561
Langford 1, c sw sw 9-18s-29e	120	2565
Langford 2, nw se sw 9-18s-29e	528	2489
Lea County (Eunice)—		
Texas Co., State-University 19-H, c se nw 19-20s-37e	89	3865
Lea County (Langlie)—		
Herschbach Drl. Co.-Western Gas Co., Burleson 2, c e½ se nw 8-25s-37e	175	3467
Lea County (Vacuum)—		
Humble, State 7-K, c ne ne 32-17s-35e	408	4665
San Juan County—		
Continental et al, Rattlesnake 94, 2-29n-19w	*	856

*Failures; †Junked; ¶Million cu. ft. gas.

Rocky Mountains

Second producer indicated for Wilson Creek, Colorado

Casper, Wyo.—Showing for 45 barrels hourly on drill-stem test from the Morrison horizon indicates commercial production for The Texas Company and The California Company's Unit 2, NW SE SW 27-3n-94w in the jointly operated Wilson Creek field, Rio Blanco County, Colorado. The well, which is a mile northwest of the discovery and sole producer, topped the Morrison at 6538 feet, drilling to 6593 feet where test was run, and is now coring in the base of the horizon at 6653 feet for a test of the underlying Sundance sands.

Wilson Creek was opened a year ago by the companies' Unit 2, which found commercial oil in the Morrison, and logged good saturation in the Sundance. It drilled into water in the lower sections of the Sundance, flooding off that sand. Present test, which is located across the crest of the structure from the discovery well, will be cored ahead and tested by degrees to determine the productivity of the Jurassic beds.

A further deepening program is announced for the Wertz field, Carbon County, southern Wyoming, by Sinclair-Wyoming Oil Company, following completion a week ago of Wertz 11-A in the lower sections of the Tensleep. The company has moved rotary to Government 10, SW SE NW 7-26n-89w, and is drilling in new hole at 5903 feet. This was the oil discovery for the field, completing for 1600 barrels in 24 hours in the upper sections of the Tensleep horizon at 5886 feet in 1937. Top of the sand was logged at 5859 feet. Prior to the drilling of this test, the Wertz field had produced only gas from the Dakota and Sundance sands.

Mountain States Completions

MONTANA

Company, Well and Location	Init. Prod. Bbls.	Depth
Fallon County (Baker-Glendive Field)—		
Montana-Dakota Utilities 78, ne sw se 26-6n-60e	¶1/3	871
79, ne sw sw 23-6n-60e	¶1/5	904
139, csw 14-6n-60e	¶1/3	975
138, cne 9-6n-60e	¶½	988
Glacier County (Cut Bank Field) —		
Glacier Prod. Co., Jaeger 1, cnw nw 15-32n-5w	55	2968
Par Oil Co., Tribal 2-170, sw ne sw 7-32n-5w	250	2796
Toole County (Kevin-Sunburst Field)—		
Prevol & Shay, Government 3, cnw sw 11-35n-3w	15	1817

WYOMING

Carbon County (Wertz Field)—		
Sinclair-Wyoming Oil Co., Wertz 11-A, se nw nw 7-26n-89w (owdd)	4622	6238
Sublette County (LaBarge Field)—		
Texas Co., State 7-K, sw se 34-27n-113w (owdd)	48	836
Weston County (Osage Field)—		
Joseph Dornacher, Apostol 1, sw se sw 4-46n-63w	8	306

*Failures; †Junked; ¶Million cu. ft. gas.

Salt Creek unitization gets federal approval

Four years of engineering studies and negotiations among holders of oil and gas rights in the principal producing sands in the Salt Creek, Wyoming, oil field culminated last week with an announcement by Secretary of the Interior Harold L. Ickes that a plan for unit operation of the field has been approved and that the State of Wyoming has signed the plan as to state-owned lands.

Announcing his action August 31, Secretary Ickes said that the lands covered by the agreement comprise nearly 15,340 acres, 90 percent of which is federal land, 4 percent state owned and 6 percent held privately.

Interior department supervision of operations on federal lands in cooperation with the operators has resulted in maintaining the wells in good mechanical condition in order to avoid underground waste, and gas recycling and restriction of vacuum or its elimination also have been practiced in the interest of conservation, he said, but nevertheless, there has been waste of gas energy through a lack of complete coordination of all operations in the field and repressuring operations have not been undertaken.

"This field has produced approximately 286 million barrels of oil since 1911, having an estimated gross value of more than 306 million dollars," Secretary Ickes said. "It reached its peak production in 1923, when 35.3 million barrels were produced, and has declined since that time to an annual yield which is now less than 6 million barrels of oil. During the period since 1920, when operations on public land were made subject to the mineral leasing act, the federal government has received $53,302,850 in royalties, 52.5 percent of which has been credited to a special fund for building western reclamation projects and 37.5 percent of which has been paid to the State of Wyoming for the benefit of public roads and schools. During the past few years the production for the greater part of the field has been declining at a rate of about 6 percent each year. It is hoped that unit operation will result in a lower rate of decline, an increase in the funds ultimately available for western reclamation as well as the public roads and schools in Wyoming, and an increase in the profits to the owners of rights in the field.

"One of the special features of the unit agreement is the government royalty schedule established in lieu of the royalty rates under the existing leases which in some instances are regarded as inequitable. The new royalty schedule will provide appropriate reduction in royalties as the rate of production declines and is in line with the authority to reduce royalty provided in the 1935 amendment to the mineral leasing act, which is commonly called the O'Mahoney-Greever Act."

Michigan Fields

Year's fifth discovery has only small initial

Mt. Pleasant, Mich.—Michigan's fifth commercial wildcat oil well for 1939 was completed this week but appeared too small in initial production to forecast more than a mild drilling campaign. The discovery was drilled by Chapman Oil Company. DeKleine 1, NE NE SE 25-5n-14w, Ottawa County, Zeeland Township, topped Traverse lime at 1660 feet and bottomed at 1667 feet. It filled up to 1600 feet in 60 hours and after a 250-gallon acid shot pumped an average of 25 barrels per day the first two days. Location is 4 miles northwest of the Old Salem pool in Allegan County.

W. F. Brown's Coleman 1, Section 11-13n-2e, Ingersol Township wildcat, Midland County, shot with 2525 pounds of solidified nitro to a 340-foot Antrim shale section at 2900 feet (bottom hole).

Michigan Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Allegan County—		
Wyoming Oil Corp., Homrich 2, sw sw sw 1-4n-13w	150	1585
Redman Oil Co., Heibel 1, ne se se 2-4n-13w	65	1655
Socony Vacuum Oil Co., Weber 7, se ne ne 11-4n-13w	365	1566
Salem Gas & Oil Co., Gaca 1, sw ne sw 14-4n-13w	150	1589
Barry County—		
Sprenger Bros., Little 1, se sw ne 23-1n-9w	*	1927
Berrien—		
John Mathew, Fee 1, nw nw nw 5-7s-17w	*	664
Bloomingdale Dev. Co., Tabor 1, nw nw se 33-5s-17w	*	1304
Clare County—		
Taggart Bros., Frackelton 13, c ne 18-18n-5w	¶10½	1530
Pure Oil Co., Bicknell B-11, c s sw nw 28-19n-6w	1400	3881
American Dr. Co., Newcomer 4, n se se 29-19n-6w	760	3889
Gladwin County—		
Stork Oil Co., Smart 4, se ne nw 29-17n-2e	15	3525
Kent County—		
Dooley et al, Niemeyer 1, nw nw se 10-5n-10w	*	1976
Strom & Shiffman, Park 1, sw sw nw 30-7n-12w	500	1907
Gordon & Bolgers, Sayers 1, se nw se 30-7n-12w	1200	1885
Smieht & Wagner's Thomasma 4, se sw ne 4-6n-12w	40	1777
Lamar Oil Co., Gravel Co. 2, ne nw se 4-6n-12w	150	1772
Macomb County—		
L. & R. Johnson, Przybla 1, se sw sw 1-4n-14e	*	500
Muskegon—		
Lentz & Millers, Bolen 1, se nw ne 19-10n-15w	*	2255
Bliss Development, Smith 1, nw ne sw 29-9n-16w	*	1750
Ottawa County—		
North American, Kuipper 1, nw ne nw 36-7n-13w	*	1900
Chapman Oil Co., DeKleine 1, ne ne se 25-5n-14w	25	1667
Van Buren County—		
Blood & Hendershott, Murry 2, nw sw nw 27-2s-16w	*	1045
Westcott 1, nw sw ne 28-2s-16w	200	1018
T. H. Ferguson, Teal 1, se nw se 2-1s-15w	*	1200
Forest Ruby, Smith 2, se se ne 11-1s-15w	20	1167
Berlin & Heters, Harvat 1, nw se ne 12-1s-15w	10	1217
Clapsaddle & Harris, Cooley 1, ne nw se 13-1s-15w	1200	1205
Locker 8, nw ne sw 13-1s-15w	200	1202
O. O. Borden, Parisian 6, se se nw 13-1s-15w	350	1226
Parisian 7, se sw ne 13-1s-15w	350	1212
Fisher & McCall, Latham 1, ne ne sw 27-4s-14w	*	1021

*Failures; †Junked; ¶Million cu. ft. gas.

It was still being cleaned out this week. With cleanout about half completed the well gauged only 140,000 feet of gas—not enough to be rated commercial but enough to warrant interest. Brown has been working on an Antrim shale gas development program for several months. Farther north, particularly in the area of Montmorency and Alcona counties, shale gas at shallow depths has been known to be in deposit for several years. This formation up to the present time has never been tested or worked commercially.

Development in the Grand Rapids district, now concentrated in Section 30 of Walker (7n-12w) and in Ottawa County, Tallmadge Township (7n-13w) continues to hold the top spot in Michigan activity. Prospects of the field extending east into the city of Grand Rapids were all but ended this week as Hogan Brother's Coit 1, Section 1-6n-12w, at the edge of the city, drilled the Traverse dry. Operators changed their plans to abandon after drilling the Traverse, however, and this week started to deepen below 2000 feet for a test of the Monroe lime.

J. V. Wicklund Development Company is carrying Lennon 1, Section 12-19n-1w, Gladwin Township, Gladwin County, wildcat, into the Monroe. It had Dundee at 3469 feet and water in Dundee at 3552 feet.

Considerable interest is now attached to Wicklund Development Company's projected deepening of State A-1, SW SW SE 11-18n-1w, Buckeye Township, Gladwin County, the discovery well in the Dundee limestone of the Buckeye field. Completed in December, 1936, at 3596 feet, the well has produced over 450,000 barrels of oil and is still pumping.

In view of the fact that the 5-inch producing string was set with a packer, where all other tests in the lease and offsets are cemented, the discovery was chosen as the test for deepening to the Monroe.

Wicklund Development Company will receive support from Sun Oil Company, only major with extensive producing acreage in the Buckeye field, and several other independents. Contract calls for deepening to 700 to 900 feet below its present depth. Operators plan to ream the hole from the 1250 feet of 6-inch, set through the Marshall, to the bottom of the hole, recase with 6-inch and then deepen with a 5-inch hole.

It will mark the first deepening project in a basin field, where prolific Dundee production was established, to the Monroe. The Monroe produces in a number of fields in the basin but no big production has been drilled in this formation where there is an extensive thickness of the Dundee.

Petroleum engineering schools reprint still available

Reprints are still available of the popular article on petroleum engineering courses offered by the different universities in the United States, which first appeared in THE OIL WEEKLY of March 6, 1939. It presented details on the petroleum engineering curriculum available at the various schools, together with brief data on their faculties, buildings and laboratory equipment.

This article created a sizeable demand for additional copies following its publication, and with school studies scheduled to get under way again in the very near future, we are glad to be able to renew the offer of presenting this matter in an attractive 16-page reprint at only 25 cents each. Address Editorial Department, The Oil Weekly, P. O. Box 2811, Houston, Texas.

California Fields

Second well at Strand doubles flow of discovery

Los Angeles.—The second well for the new Strand field was completed last week by Tide Water Associated Oil Company, KCL-E24-7, Section 7-30-26, for 1755 barrels from 8330 feet. Potential for this well was double that of the discovery. The oil tested 34.6 gravity. Gas production was 1,650,000 cubic feet.

This company and Continental Oil Company completed the first well in the area, which is 14 miles northwest of Bakersfield and is between the Rio Bravo and Ten Sections fields.

In the same area Shell Oil Company's Ohio-KCL-A84-12, in the canal extension, drilled into an oil sand below 8300 feet. A completion would extend production to the west. Continental Oil Company is below 12,700 feet in its deep test, KCL D-2, Section 14-30-26.

The Wasco field, a 1938 discovery by Continental Oil Company, came back to life last week with a completion by George F. Getty, Inc., whose Janssen 1, Section 7-27-24, made 3600 barrels from 13,102 feet. The oil tested 36.5 gravity. Correlation shows the well to be high on structure.

The Arvin pool was extended to the north by Richfield Oil Company, whose Mott 1, Section 9-31-29 made 2400 barrels from 6154 feet.

A completion in the Santa Maria Valley field by Fred E. Cole Petroleum Company, O'Donnell 19, was good for potential of 4300 barrels. The completion will force the drilling of 3 offsets. Output of this field is going to market by truck, since pipe line buyers withdrew and price of the oil has dropped to 30 cents a barrel.

California Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
Los Angeles County (Dominguez)—		
Shell, Reyes 99	1397	7849
Los Angeles County (Montebello-West)—		
Fullerton Oil Co., Scott-Arnold 1	2160	7657
Kern Oil Co., Monterey 33	1300	7730
Mulholland 5	750	7641
Pongrantz Petr. Co., Martin 1	850	7636
Union, Howard & Smith 5	920	7615
Los Angeles Co. (Wilmington)—		
Brookline Oil Co., Harbor 1	325	3638
Dumm Bros., No. 2 (LB)	220	3450
Long Beach Oil Dev. Co., "W" (LB) 1	415	3872
"W" (LB) 2	263	3900
Royalty Service, Hall 15-7-1	192	3650
Signal, Signal-LB-SP (LB) 5	300	4163
Fresno County (East Coalinga Eocene)—		
R. S. Lytle, No. 33-18F	3814	7592
Kern County (Kern River)—		
D. B. K. Company, No. 8	8	432
Kings County (Kettleman Dome) —		
KDNA, No. 4-18Q	50	8295
Kern County (Midway-Sunset)—		
Oxford Oil Co., No. 5	55	1515
Texas Co., No. 34	100	3268
Kern County (Mountain View-South)—		
Richfield, Mott 1	2400	6154
Ventura County (Ventura Avenue)—		
Shell, Taylor 101	240	6950

*Failures; †Junked; ¶Million cu. ft. gas.

WILDCAT REPORT
New Starts and Completions

ARKANSAS

FIRST REPORTS

Clark County—William S. King and Associates, H. Ross 1, located 640 ft s and 359 ft w nec s½ sw 3-10-21, rigging up.

COMPLETIONS

Columbia County—Atlantic Ref. Co.'s Pinewoods Lbr. Co. 1, ne ne 16-18s-22w, elev 220 ft, top Wilcox 560 ft, top Midway 1240 ft, top Arkadelphia 1740 ft, top Nacatoch 1745 ft, top Tokio, 2904 ft, top red beds 3295 ft, top Paluxy 3419 ft, massive anhydrite 4050-4230 ft, top Hill (Rodessa) 4352 ft, top Gloyd 4546 ft, top lower Marine 6415 ft, top Buckner anhydrite 8756 ft, top Smackover lime 8807 ft, top Reynolds (Smackover) lime 8814 ft, perforated csg 8861-75 ft, completed flowing 22 bbls 43.5 gravity oil per hour through 18/64-inch choke, casing pressure 1150 pounds, tubing 750 pounds, total depth, 9002 ft.

CALIFORNIA

FIRST REPORTS

Los Angeles County—Owen O. Oil Co.'s Potrero Heights 1, 200 ft n, 150 ft e c/ls San Gabriel Blvd., Walnut Grove ave, Potrero Heights area, cellar.

San Luis Obispo County—Page Petroleum Co.'s Callendar-Mesa 1, 200 ft s, 200 ft e nw 15-11-35, Nippomo area, lcn.

COMPLETIONS

Los Angeles County—John Hokom's Hokom 1, Carbon Canyon area, abnd 2941 ft, Texas Co.'s, Inglewood Ext. Co. No. 1, nec 34-2-15, abnd 6672 ft.

Fresno County—Superior's S.P.L. 1, Section 15-18-16, abnd 11,442 ft.

Santa Barbara County—Hogan Petroleum Co.'s Zabala 1, sec 33-9-34, Bicknell area, abnd 4110 ft.

ILLINOIS

FIRST REPORTS

Clark County—Gooch et al's M. Davis et al 1, 400 ft from east line and 400 ft from south line, se 17-9n-13w, dr 80 ft. Trenton Rock Oil Co.'s Black 1, c se nw 14-11n-14w, rigging up machine. Spencer's Montgomery 1, sw se sw 5-9n-14w, loc.

Fayette County—Central States' Sperry 1, c ne se nw 17-6n-3e, waiting on cement with surface casing set to 103 ft. Powell & McClary's Wallin 1, ne nw ne 13-5n-2e, loc.

Greene County—Scroggins' McVay 1, c sw ne 4-10n-11w, loc. F. A. Johnson's J. Owens 1, sw se se 16-11n-10w, dr at 215 ft.

Henderson County—Media Oil Co.'s Pendervis 1, 1013 ft from north line and 881 ft from east line, ne ne 17-9n-4w, standing at 520 ft.

Jefferson County—Alma Oil Co. & Jefferson Oil & Gas Co.'s Rogers 1, se se nw 23-4s-2e, dr.

Livingston County—Mitchell et al's McWilliams 1, 320 ft from north line and 330 ft from west line, se 3-30n-6e, dr at 460 ft.

Marion County—Dunbar & Wingate's France 1, c ne nw sw 1-4n-4e, dr at 410 ft.

Menard County—Wm. Johnson's T. Johnson 1, se nw ne 26-19n-5w, dr.

Monroe County — Gill Overton's Columbia Quarry 1, c nw sw se 3-3s-11w, dr at 700 ft.

St. Clair County — Oil Exploration Co.'s Whickler 1, nw nw se 34-2s-6w, rigging up machine.

Washington County—Armer et al's Norwich 1, ne ne ne sw 33-3s-1w, moving in rotary tools.

Wayne County—Illinois Mid-Continent Oil Co.'s Ahrens 1, sw se nw 36-2s-8e, loc.

White County—J. W. Carter et al's Warren A. Johnson 1, ne sw ne 12-4s-10e, drilling at 320 ft.

COMPLETIONS

Douglas County—Lewellen & Phillips' Kennedy Bros. 1, ne nw sw 34-16n-9e, drilled through oil show at 392 ft, abnd 527 ft.

Edgar County—Burkett, Denton & Burns' W. J. Baum 1, sw nw ne 12-16n-14w, Young tnp, top Carper 592 ft, abnd 610 ft.

Hamilton County—Kingwood Oil Co.'s Griswold 1, se se ne 29-6s-6e, Twigg tnp, top Fredonia 3097 ft, abnd 3197 ft.

Jasper County—Siberling et al's Freeland 1, 600 ft from east line and 660 ft from south line, sw nw 15-8n-14w, abnd.

Morgan County — Underwriters Oil Syndicate's W. H. Diller 1, w½ nw nw 18-13n-8w, Franklin tnp, abnd with water in Devonian lime, td 1160 ft.

Moultrie County—Signal Hill Oil Co.'s E. L. Beale 1, se se ne 29-15n-5e, Lovington tnp, top St. Louis 1740 ft, abnd 1887 ft.

STATE	WILDCATS STARTED		WILDCAT TESTS COMPLETED							
			Total		Oil		Gas		Dry	
	This Week	This Year	This Week	This Year	This Week	This Year	This Week	This Year	This Week	This Year
Alabama	...	4	...	2	...	...	...	...	...	2
Arkansas	1	26	1	17	1	2	...	...	...	15
California	2	155	4	76	...	20	...	2	4	54
Colorado	...	2	...	1	...	...	...	...	...	1
Florida	...	2	...	1	...	...	...	...	...	1
Georgia	...	3	...	1	...	...	...	...	...	1
Illinois	17	424	9	304	...	21	...	1	9	282
Indiana	...	38	2	24	...	8	...	1	2	15
Kansas	4	178	2	161	...	50	...	5	2	106
Kentucky	1	27	1	19	...	7	...	...	1	12
Louisiana	5	90	3	68	...	11	...	1	3	56
North Louisiana	...	31	1	21	...	3	...	1	1	17
South Louisiana	5	59	2	47	...	8	...	...	2	39
Michigan	9	180	10	222	1	16	...	...	9	206
Mississippi	...	9	...	5	...	...	...	...	...	5
Missouri	3	40	3	13	...	...	...	...	3	13
Montana	...	2	...	2	...	...	...	...	...	2
Nebraska	...	1	...	1	...	...	...	...	...	1
New Mexico	...	26	...	18	...	1	...	1	...	16
New York	...	...	...	3	...	1	...	1	...	1
Oklahoma	2	126	1	126	...	16	...	6	1	104
Ohio	...	4	...	9	...	1	...	...	...	8
Pennsylvania	...	3	...	3	...	...	...	...	...	3
South Dakota	...	2	...	...	...	...	...	...	...	...
Texas	29	747	24	821	1	75	...	13	23	733
East Texas	3	86	2	76	...	3	...	1	2	72
North Texas	1	96	5	160	...	25	...	1	5	134
Gulf Coast	1	79	1	69	...	5	...	1	1	63
Panhandle	...	7	...	7	...	...	...	...	...	7
South Texas	23	340	15	370	1	28	...	8	14	334
West Texas	1	139	1	139	...	14	...	2	1	123
Utah	...	1	...	...	...	...	...	...	...	...
West Virginia	...	2	...	1	...	...	...	...	...	1
Wyoming	...	5	...	3	...	...	...	...	...	3
Total U. S	73	2,097	60	1,908	3	229	...	31	57	1,648

St. Clair County — Tanner & Melburne's Miller Estate 1, sw se ne 29-2s-7w, Athens tnp, abnd 1460 ft.

Washington County—Pres Cochrane, Jasper et al's J. Orlick 1, se se se 11-3s-1w, abnd when Benoist and McClosky found dry.

Williamson County—Reece & Roberts' T. Arnold 1, c nw ne 21-10s-4e, Stone Fort tnp, top Fredonia 2337 ft, abnd 2397 ft.

INDIANA

COMPLETIONS

Gibson County—Thomas Simmons & J. L. Taylor's Epperson Heirs 1, se ne ne 9-4s-11w, Johnson tnp, abnd 2554 ft. Michel Bros.' Wm. A. Carithers 1, ne se se 23-1s-10w, Patoka tnp, top Hardinsburg at 1345 ft, abnd when failed to recover lost tubing, to drill No. 2.

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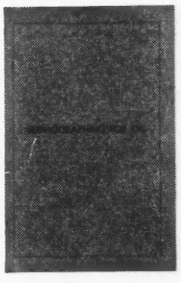

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KANSAS

FIRST REPORTS

Barton County—Kingman Oil Co.'s Harzman 1, cwl nw sw 33-16-11w, lcn.

Cowley County—Holl et al's Olsen 1, nec sw 6-35-8e, pits.

Greenwood County—Sharpless et al's Edwards 1, nwc sw 32-24-12e, dr.

Saline County—Cling et al's Erickson 1, nec 28-16-3w, otd 1800 ft, rudd.

COMPLETIONS

Atchison County—Wakefield et al's National Life Insurance 1, c nw ne 17-6-20e, near Parnell, top Mississippi 1680 ft, top Hunton 2147 ft, top Viola 2337 ft, top Simpson 2673 ft, top Arbuckle 2750 ft, abnd 2790 ft.

Russell County—Central Petroleum Co.'s Crisman 1, sw nw ne 20-14-14w, e Vaughn pool, top Topeka 2723 ft, top Dodge 3012 ft, top Lansing 3058 ft, top Conglomerate 3296 ft, top granite 3331 ft, abnd 3335 ft.

KENTUCKY

FIRST REPORTS

Henderson County — Yingling & Hayes' Silas Nunn Heirs 1, 1500 ft from south line and on east line, section 18-0-25, rigging up rotary tools.

COMPLETIONS

Hancock County — Phillips Petroleum Co. and Carter Oil Co.'s B. H. Parker 1, 2 ft from each line in extreme ne quarter, section 22-L-25, top Devonian 4529 ft, drilled to 4921 ft, plugged back to McClosky, topped at 2973 ft, little oil drowned out by salt water, abnd.

NORTH LOUISIANA

COMPLETIONS

La Salle Parish—Hunt Oil Co., La. Central Lbr. Co. 8, 19-11n-4e, dry abnd 2047 ft.

SOUTH LOUISIANA

FIRST REPORTS

Calcasieu Parish—C. L. Arnett et al's A. Welsh 1, center of se¼ nw¼ sec 19-10s-12w, lcn.

Livingston Parish—Humble's Great Southern Lumber Co. 1, Springville area, 660 ft s and 660 ft e of the nwc sec 27-7s-5e, lcn.

St. Martin Parish—William Helis' Levert 1, Section 28 dome, 1650 ft s, 490 ft e of nwc sw¼ sec 33-9s-7e, lcn.

Orleans Parish—W. T. Burton's L&N RR Co. 3, lcn in 25-11s-14e.

COMPLETIONS

Rapides Parish—T. D. Humphrey's J. J. Kreze 1, 41-2n-2e, Wilcox 4790 ft, abnd 5050 ft.

Vernon Parish—Nat Hunter's W. T. Burton Fee 1, 13-2n-6w, Cook Mountain 4665 ft, abnd 6512 ft.

MISSOURI

FIRST REPORTS

Clay County—Pabolo Development Co.'s Morrow 1, 35-52n-32w, otd 500 ft, co 381 ft, so.

Harrison County—Elwell et al's Maple 1, ne sw se 3-62n-26w, dr.

Jackson County—Bradford et al's Trantos 1, cwl se nw nw 8-49-32w, dr.

COMPLETIONS

Clay County—Eastern Drilling Co.'s Williams 1, nwc ne 28-53n-32w, Paradise gas pool, top Mississippi 1034 ft, top Hunton 1406 ft, top Viola 1620 ft, top St. Peter 1731 ft, top Arbuckle 1838 ft, abnd 1844 ft.

Macon County—Riddle's Jones 1, c nw nw 16-58n-17w, 20 mi nw Macon, abnd, lcn.

Sullivan County—Elwell et al's Taylor 1, sw nw ne 12-62n-21w, 5 mi w Milan, top Mississippi 665 ft, top Hunton 1014 ft, top Viola 1354 ft, top St. Peter 1547 ft, top Arbuckle lime 1638 ft, abnd 1638 ft.

MICHIGAN

FIRST REPORTS

Allegan County—C. E. Weller's Junek 1, nw nw sw 14-3n-11w, dr.

Barry County—Century Oil Co.'s Eckert 1, se ne se 3-4n-9w, dr.

Clare County—Sun Oil Co.'s Davis 1, c e ne se 16-20n-6w, rig.

Kalamazoo County — Twin Drilling Co.'s Upjohn 3, nw ne, sec 33-1s-10w, dr.

Mecosta County — Turner Petroleum Corporation's Bongard 1, nw ne 21-16n-7w, rig.

Ottawa County—Daily Crude Oil Co.'s Hudsonville Bank 1, sw se sw 11-6n-14w, rig. Welch Oil Co.'s Host 1, sw sw ne 32-8n-13w, dr.

Roscommon County—R. D. Kirkham's Neer 1, nw se sw 26-24n-4w, dr.

Van Buren County—Adams Drilling Co.'s Mesch 1, se ne sw, 17-3s-14w, dr.

COMPLETIONS

Barry County—Sprenger Brothers' Litts 1, se sw ne 23-1n-9w, Traverse 1877 ft, abnd 1927 ft.

Berrien County—John Mathews' Fee 1, nw nw nw 5-7s-17w, abnd 664 ft. Bloomingdale Development Company's Tabor 1, nw nw se 33-5s-17w, abnd 1304 ft.

Kent County—Dooley et al's Niemeyer 1, nw nw se 10-5n-10w, Traverse 1921 ft, so 1923 ft, water 1970 ft, abnd 1976 ft.

Macomb County—L. & R. Johnson's Przbyla 1, se sw sw 1-4n-14e, abnd 500 ft.

Muskegon County—Lentz & Miller's Bolen 1, se nw ne 19-10n-15w, abnd 2255 ft. Bliss Development Company's Smith 1, nw ne sw 29-9n-16w, abnd 1750 ft.

Ottawa County—North American's Kuipper 1, nw ne nw 36-7n-13w, Traverse 1853 ft, so 1969 ft, abnd 1900 ft. Chapman Oil Company's DeKliene 1, ne ne se 25-5n-14w, Traverse 1660 ft, td 1667 ft, initial production 1400 ft of oil; after acid initial 25 barrels day.

Van Buren County—Fisher & McCall, Inc.'s Latham 1, ne ne sw 27-4s-14w, Traverse 991 ft, abnd 1021 ft.

OKLAHOMA

FIRST REPORTS

Pontotoc County—Simpson-Roadhouse's McKay 1, swc ne 1-2n-7e, lcn.

Pottawatomie County—Kerr's Harrington 1, nwc 24-9n-4e, rig up.

COMPLETIONS

Noble County—Shell Oil Co.'s Mosena 1, c w½ w½ se 9-21-2e, 1½ mi e Sumner, top first Wilcox 4456 ft, top second Wilcox 4519 ft, td 4533 ft, pb 3250 ft, abnd.

EAST TEXAS

FIRST REPORTS

Camp County—Harry S. Moss et al's Mrs. Abbie Blackstock 1, 330 ft out of nwc of 85.5-acre tract, E. B. Davis sur, near Pittsburgh, mim.

Navarro County—Topaz Oil Co.'s E. Trammel 2, 2772 ft ne of m/e/sw line and 1215 ft nw of m/s/se line of A. C. Kyser sur, 250 ft from Trinity River and on Flag Lake pool trend, lcn.

Trinity County—Gossage et al's First Nat'l Bank 1, 1280 ft from n and 382 ft from e lines of B. F. Wright sur, ½ mi s of Trinity, rig.

COMPLETIONS

Dallas County—Mauldin Oil Co.'s W. E. Howell 1, 1000 ft from s and 690 ft from w lines of S. Layton sur, 3 mi se of Coppell,

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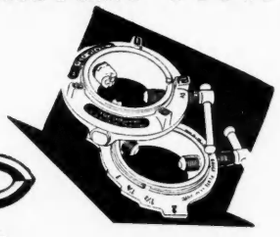

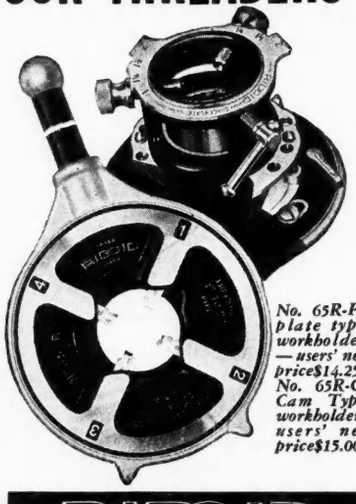

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THE RIDGE TOOL CO.

ELYRIA, OHIO

RIGID PIPE TOOLS

elev 661 ft, top Woodbine 245 ft, top Paluxy 990 ft, abnd 2500 ft.

Limestone County—W. C. McGlothlin and Zephyr Oil Co.'s W. T. Adams 1, 400 ft out of nwc of 65-acre tract, Pedro Varella sur and L. Norvall sur, elev 544 ft, Pecan chalk 2185-2360 ft, Austin chalk 2697-3196 ft, top Woodbine sand 3576 ft, abnd in lime 3729 ft.

WEST TEXAS

FIRST REPORT

Crockett County—Continental Oil Co. et al's J. S. Todd (4480-acre unit) 1, 1980 ft from w and 1650 ft from s lines GC&SF sec 30, blk WX, mim for Ordovician test.

COMPLETION

Concho County—L. G. Byerley et al's Mrs. L. Noyes 1, 350 ft out of northwest corner sec 1402, M. Creyat sur, 2 mi n of Lightner, elev 1924 ft, show o&g 1450 ft, abnd with hfw 1480-1529 ft.

NORTH TEXAS

FIRST REPORTS

Clay County—Shell Oil Co.'s G. W. Scaling 1, 20 ft n and w of center of blk 87, J. H. Belcher sur, 3¾ mi s of Burns pool, mim for 5100-ft test.

COMPLETIONS

Archer County—S. H. Fagadau et al's Mrs. Cordie Melugin 1, 1103 ft from n and 1829 ft from w lines sec 41, blk 5, Clark-Plumb sur, Gunsight lime 1105-07 ft, abnd 1161 ft.

Clay County—Clacotex Oil Co.-A. F. Kimmell's W. R. Lyon 1, 750 ft from n and 1050 ft from w lines sec 40, Byers Bros. subdiv, abnd 1202 ft.

Cooke County—John A. Pace et al's J. T. Donald 1, 1650 ft from m/e/e and 400 ft from m/n/s lines of S. P. Ry. sur A-971, abnd in top schist 2881 ft.

Jack County—Scharf et al's W. M. Crowley 1, 1250 ft from s and 300 ft from w lines tract, sec 2, S. F. I. & W. sur, A-2187, abnd 535 ft.

Wichita County—Mrs. R. L. Montgomery et al's N. H. Martin 1, 1130 ft from s and 150 ft from w lines blk 4, H. Hastie sur, A-98, abnd 1410 ft.

SOUTH TEXAS

FIRST REPORTS

Bexar County—C. A. Smith's Schuwirth Farm 1, 817 ft nw line, 635 ft ne line of blk 2 in de la Garza survey, spudded.

Cameron County—Sal Vieja Oil Co. & Pure Oil Co.'s Gatewood Newberry 2, begin at nw cor of 5986-ac lse and go 880 ft s; thence 4978 ft e to lcn in San Martin gr, rig.

Duval County—J. D. Clair Smith, Ruiz 1, 2310 ft se line, 1500 ft ne line of ne¼ of C&M RR Co survey 127, moving in. Standard Oil Co. of Texas, Casey 1, 990 ft n line, 990 ft e line of blk 25, sec 4, addition No. 3, Copita Farm and Garden Tracts, San Pedro de Charco Redondo gr, lcn.

Jackson County — Moore and Ahern and Cron and Gracey's Heard 1-B, 466 ft sw line, 516 ft nw line of 100-ac tr, Morris and Cummings sur No. 13, drilling 2400 ft.

Jim Hogg County — W. L. Goldston and Charles R. Fox, Canales 2, 466 ft n line, 466 ft e line of blk 24, subd of Las Mujeres, 3482.5-ac ranch which is share 25, Jose Marcelo Ynojosa gr, lcn. T. S. Scibienski, Tr.'s Down Royalty Corp. 1, 330 ft sw line, 330 ft nw line of blk 34, Beer and Coffey subdivision of 2570.5-ac tr, lcn.

Jim Wells County—Magnolia's Stolze 1, 660 ft s line, 660 ft e line of lot 16, blk 10, subd of Lands adjoining townsite of La Gloria, building derrick. W. Earl Rowe et al's McNeill 1, 330 ft w'ly w line, 330 ft n line of tr, San Antonio de Agua Dulce gr, moving in. Pat R. Rutherford and Royal Oil and Gas Co.'s Garcia 1, 330 ft n line, 5200 ft w line of 600-ac lse, La Trinidad gr, rigging up. Smith and Story and Tom Graham's Shaeffer 1, 180 ft s line and 330 ft e line, Stunky Welch sur No. 90, drilling 1300 ft.

Kleberg County—Pure Oil Co.'s State of Texas 1 (171), 440 ft sw line, 440 ft nw line of state tract 171, in Laguna Madre, moving in rig.

LaSalle County—S. J. V. Oil Co.'s Yeager 1, center of lot 4, blk 4, Wallace subd of Yeager ranch, sur 53, drilling 435 ft.

Live Oak County—H. F. Baker's Rossi 2, 330 ft n line, 675 ft e line of 136-ac lse of Bridget Haughney sur, Potter-Wedding subd, lcn. Norsworthy Prod. Co.'s Knight 1, 330 ft n line, 330 ft w line, J. R. Johnson sur, lcn cleared.

McMullen County—J. C. Carter's Franklin 1, 660 ft s line, 660 ft w line of E. L. Taylor sur 30, set sur csg.

Milam County—M. R. Cloud, Tr.'s, Henniger 1-B, 175 ft w line, 950 ft s line of 65-ac tr, S. C. Robertson sur, skid on.

Starr County—Magnolia Pet. Co.'s Garcia 2, Salvador Vela porc 90, Ab. 178, tentative lcn. W. W. Zimmerman's Wood 1, 150 ft e'ly w line, 450 ft n'ly n line of 64.7-ac lse No. 2, drilling 650 ft.

Victoria County—Colton and Colton's Terrell 1, 466 ft nw line, 466 ft ne line of lot 2, Colton subd of Terrell point pasture, Antonio Sideck sur, lcn. Lee S. Corkill's Reimann 1, Manuel Zepeda gr, 2½ mi n Coletto Creek field, lcn.

Webb County—O. W. Killam's Fee 3, 334 ft n line, 297 ft e line of blk 16, survey 1859, lcn. W. C. McBride's Josefina Pena 1, 330 ft sw line, 836 ft nw line of 100-ac lse out of w½ of sh 2, Cabeceras de los Angeles gr, lcn.

COMPLETIONS

Bee County—Dirks Brothers and Richardson's West 1, 330 ft s line, 450 ft w line of 580-ac tr, James Douglas sur, abnd 6005 ft.

Guadalupe County — Lincoln's Lowman 1, 510 ft n'ly n line, 1020 ft w'ly w line of 148-ac tr, George Allen survey, top Austin chalk 1187 ft, top Edwards 1248 ft, top Trinity 3035 ft, abnd 3175 ft.

Jim Wells County — Boring Bradstreet's Rehment 1, 330 ft n line, 330 ft w line of ne¼ of 327-ac tr and sec 12, Morro Phillips sur, abnd 5273 ft. C. E. Heard and I. W. Keys' Driscoll 1, 3265 ft n'ly n line, 466 ft most w'ly e line of 6701-ac lse, Las Animas Sola gr, gas and distillate sand 4814-20 ft, sand oil show 6758-70 ft, abnd 7031 ft. Kilgore Developer's Mosser 1-A, 330 ft s line, 330 ft e line of lot 3, blk 5, W. Hope Davis Garden land subd, Fred Frank survey, Ab. 161, oil sand 5141-54, comp 100 barrels per day at 5205 ft; ⅛-inch choke, 800 pounds tbg pressure and 1010 pounds casing pressure. H. R. Smith's McGhee 1, 330 ft n line 330 ft e line of lot 7, William Hope Davis Farm land subd, Fred Frank survey No. 152, Ab. 161, abnd 5621 ft.

Live Oak County—Henderson Coquat's Moss 1, 82 ft s line, 153 ft e line tr, 1580, sec 29, Dr. C. F. Simmons farm lots subd, abnd 1746 ft.

Medina County—M. L. Walker's Zuberbueler 2, 990 ft s line, 2350 ft e line, 330-ac tr, survey 391, abnd 462 ft.

Milam County—M. B. Cloud, Trustee's, Henniger, 175 ft w line and 987 ft s line of 65-ac tr, S. C. Robertson sur, top Edwards 3165 ft, abnd 3169 ft.

Nueces County—The Texas Co.'s Rutland 1, 660 ft most n'ly ne line, 330 ft se line, sec 130, George H. Paul's subd, Driscoll ranch, Jose A. Cabosos gr, abnd 6722 ft.

Refugio County—Transwestern, Wood 1, 467 ft n line, 554 ft w line of 40-ac tr, in R. H. Wood Mission River Ranch subd, Dona Anastacia Rejoas sur, abnd 7010 ft.

Starr County—Herbert Aid's Garcia 1, 750 ft n line and 75 ft w and e lines of 9473-ac tr, sec 5-A, Porc 71, Camargo jurisdiction, lcn abnd.

Victoria County—John G. Mayo's Weaver 1, 330 ft n line, 330 ft w line of 459-ac tr, Diego Garcia survey, abnd 6010 ft.

Webb County—G. W. Basom, Tr.'s, Henry Adami-Mills Bennett 1, 643 ft n line, 220 ft e line of H&GN survey 335, abnd 1278 ft. Locke Purnell's Gates 1, 330 ft s line, 330 ft w line of lot 7, sec 21, CCSD&RGNG sur, blk 1, sand 1520-69 ft, sand 1580-82 ft, abnd 1709 ft.

TEXAS GULF COAST

FIRST REPORTS

Montgomery County—A. T. Gramboski's Gay 1, 330 ft out of sec 89.5-ac tr in Wm. Landrum sur, now of Montgomery, prep to sp.

COMPLETIONS

Fort Bend County—R. N. Ranger's Blakeley 1, Clodine area, 1326 ft from sel and 4855 ft from nel, 1092-ac ls in T. Habermacher sur, abnd 8017 ft.

WYOMING

COMPLETIONS

Fremont County—Hall & Olliger's Government 5, nw ne 33-38n-95w, abnd 1000 ft.

Weston County—John Brorby's George 1, sw se nw 26-48n-64w, abnd 2462 ft in Madison lime.

West Virginia permits

Charleston, W. Va.—A sharp drop in West Virginia drilling activity is reflected in a decrease from 74 to 59 in the number of drilling permits issued by N. P. Rhinehart, chief of the state department of mines, in July from the previous month. While dropping 20.3 percent from June, the July total ran even with permits issued during the corresponding month a year ago.

Permits issued during the first 7 months of this year total 351, or 13 permits or 3.8 percent under the 364 issued during the same period of 1938.

July permits, by counties, follow: Cabell 6, Clay 5, Gilmer 7, Hancock 3, Jackson 4, Kanawha 9, Lincoln 3, Logan 1, Pleasants 3, Putnam 1, Ritchie 6, Roane 6, Tyler 1, Wayne 2, Wirt 1, and Wood 1.

PRODUCING ROYALTY — Owner offers about 12 acres producing royalty—premium oil—$750 per acre base. Yielding substantial monthly returns. Also some non-producing royalty under entire block of major company—$7.50 per acre. Above prices for quick sale only. Good titles.

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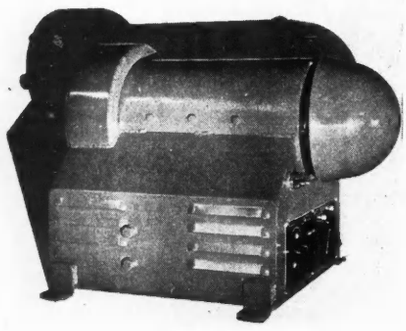
NOTES FOR THE
Equipment Buyer and User

Welding Machine
LINCOLN ELECTRIC COMPANY

Lincoln Electric Compan, 12818 Coit Road, Cleveland, Ohio, has introduced a new 200-ampere arc-welding machine for belt or direct drive. "Shield-Arc Junior" is designed for duty in shops which have engine or electric motor powers available. Outstanding feature is a control system which permits independent control of voltage and current



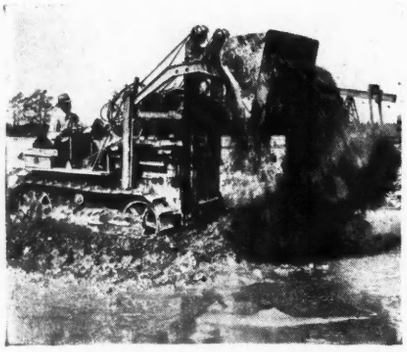
Lincoln Welder

to provide maximum arc heat and penetration, and a flexibility of adjustment to obtain the right type and size of arc for each job. Equipped with non-inflammable insulation the machine may be operated with relatively large electrodes at high current without burning out. The generator is a variable voltage type with laminated pole pieces. Construction is of arc-welded steel, drip-proof. The welder is fitted with four steel feet welded to the base and drilled for bolting. It occupies a space less than two feet square.

Makers claim uniform welding current, of high responsiveness, for speedy welding of all metals and alloys, light gauge and heavy materials.

Tractor Cable Control
CATERPILLAR TRACTOR COMPANY

Just announced by Caterpillar Tractor Company, Peoria, Illinois, is a single-drum rear-mounted cable control for attachment to bulldozers, trailbuilders and similar single-cable-operated tractor equipment. Manufacturers say



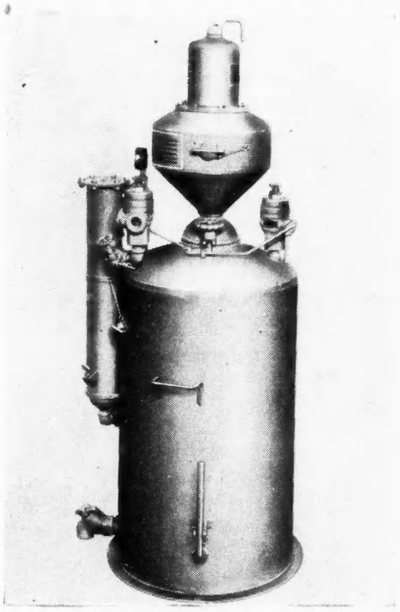
Caterpillar Tractor Cable Control

that the drum is easily and quickly attached, that the position of the control lever at the operator's right hand insures speed and precision in manipulating the bucket, blade, or boom, and that brake and clutch adjustments are made at easily accessible points.

Portable Acetylene Generator
THE LINDE AIR PRODUCTS COMPANY

A new acetylene generator, known as the Oxweld MP-9 Medium-Pressure Acetylene Generator, and designed to combine portability with the operating advantages usually found only in larger units, has just been announced by The Linde Air Products Company, 205 E. 42nd Street, New York.

The MP-9 weighs only 129 pounds and can readily be moved about the shop or in the field. It holds 25 pounds of size 14 ND Union Carbide and will deliver as much as 50 cubic feet of acetylene per hour at any desired pressure up to 15 pounds per square inch.



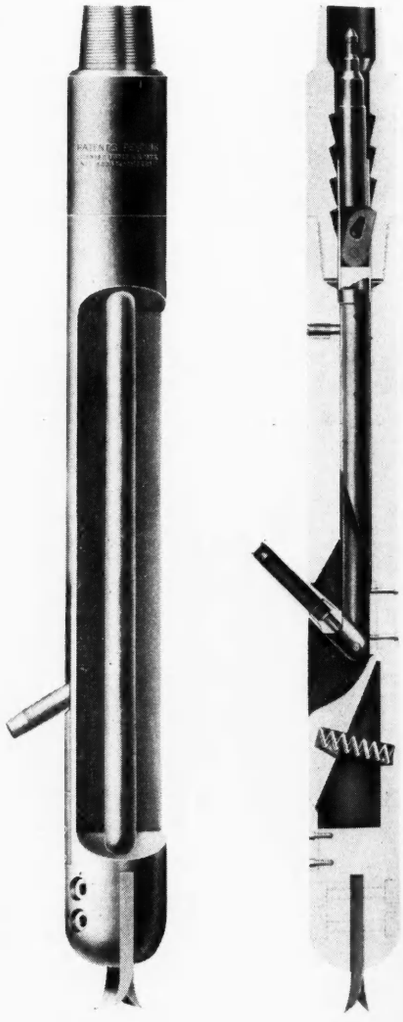
The Oxweld MP-9 Medium-Pressure Acetylene Generator

The generator produces a smooth flow of clean, dry acetylene with no appreciable variations in pressure. This is particularly valuable in maintaining a stable blowpipe flame. Operation of the generator is extremely simple since only one handle is used to start or stop generation of the acetylene, and to adjust the delivery pressure.

Other advantages are such features as two relief valves, one for the generating chamber, and the other for the hydraulic back-pressure valve; a large hydraulic back-pressure valve, which prevents the carrying over of water to the hose, and checks any reverse flow of gases; and an interference mechanism which allows only the proper sequence of operations during recharging.

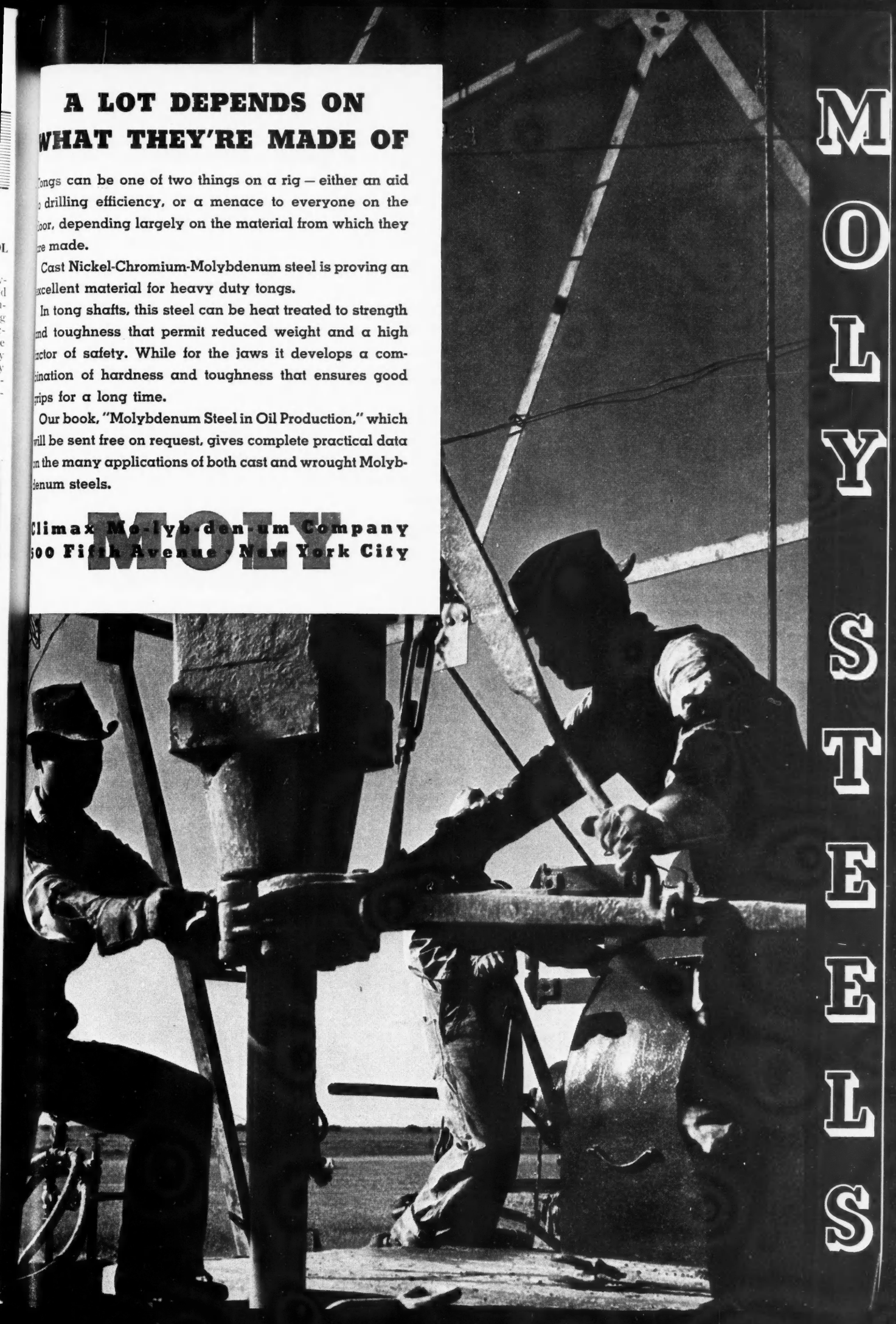
Side Wall Sampler
HOMCO CUTTING & FISHING TOOL SERVICE

Homco Cutting & Fishing Tool Service, a division of Houston Oil Field Material Company, Houston, Texas, announces a new method of recovering side wall samples which, the manufacturer claims, will considerably cut the time required to complete a well by eliminating unnecessary coring. Any number of samples may be taken without interrupting normal drilling pro-



cedure, and the tool is designed to recover samples sufficiently large to furnish a complete analysis of the formation. Cores 1¼-inch in diameter and 4 to 6 inches in length may be obtained in 8½ to 12¼-inch diameter holes, while 1⅛-inch cores, 4 to 6 inches long, may be obtained in 7½ to 8½-inch holes, the length of samples depending on the length of core tube used.

This tool is run on drill pipe and the sample is cut and recovered through



A LOT DEPENDS ON WHAT THEY'RE MADE OF

Tongs can be one of two things on a rig — either an aid to drilling efficiency, or a menace to everyone on the floor, depending largely on the material from which they are made.

Cast Nickel-Chromium-Molybdenum steel is proving an excellent material for heavy duty tongs.

In tong shafts, this steel can be heat treated to strength and toughness that permit reduced weight and a high factor of safety. While for the jaws it develops a combination of hardness and toughness that ensures good grips for a long time.

Our book, "Molybdenum Steel in Oil Production," which will be sent free on request, gives complete practical data on the many applications of both cast and wrought Molybdenum steels.

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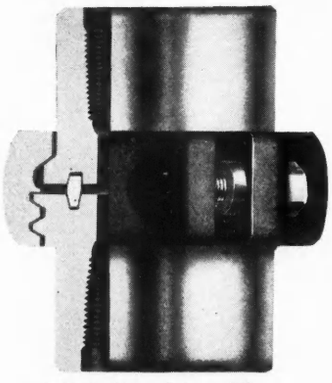
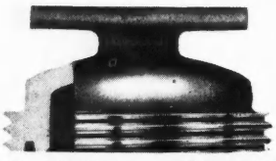


With Blanking Plug



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400+ pages; 14 line drawings, including a large correlation chart in pocket; 22 full-tone plates of Foraminifera; 18 tables (check lists, and a range chart of 15 pages) Bound in blue cloth; gold stamped; paper jacket; 6x9 inches.

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NOTES FOR THE Equipment Buyer and User

drill pipe in connection with a wire line retractable core barrel. Rotation and circulation of drilling fluid is permitted at all times, except when actuating the drill stem to obtain samples, by the use of a special circulation head with safety wire line stuffing box provided for use with the sampler.

The main body of the tool is attached to the drill stem and lowered into the hole to the desired depth. The coring assembly is lowered through the drill stem on the wire line overshot assembly into the tool. When the lower section of the core barrel assembly, consisting of core tube and tube holder, comes in contact with the core tube deflector in the tool, the core tube is deflected through an opening in the tool into the side wall of the hole at an approximate 30° angle, anchoring the tube in the formation. The coring assembly is locked in position by a releasing latching device in the top section of the coring assembly, and a ground seat is provided to stop the assembly from passing too far through the tool.

As the drill stem is lowered slightly, the core tube is forced into the formation from the 30° angle to the perpendicular of the tool through an angle of 90° and finally comes to rest against the stop on the tool at a 45° angle. An upward movement of the drill stem returns the core tube to its original position, the assembly is unlatched from the tool, and retracted from the drill stem. Upon removal from the hole, the sample is removed, core tube replaced on holder, and coring assembly is ready to repeat the operation.

All tools, subs, circulating head, overshot assembly, etc., necessary to the operation of the Homco Side Wall Sampler, with the exception of the wire line and wire line reel, are furnished to the user. These tools are available on a service basis in the United States and are for sale in foreign fields.

Security Engineering Company Names Mountain Representative

E. C. Dilgarde of Casper, Wyoming, who has been identified with the marketing of oil well supples in the Rocky Mountain area for many years, has recently been appointed independent sales and service representative for Security Engineering Company, Whittier, California.

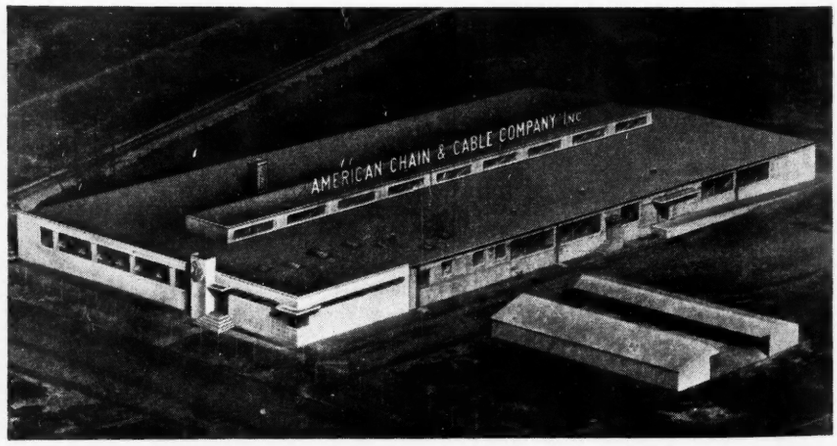
Dilgarde will direct the sales and service in the states of Colorado, Idaho, Montana, Utah and Wyoming and the northern half of New Mexico for Sievers Reamers and Reamer Parts, Securaloy drillable products and other items manufactured and marketed by Security Engineering Company. A suitable warehouse stock will be carried at 130 West Railroad Avenue, Casper, Wyoming, but the fields will be served jointly from this warehouse and by established distributors and dealers throughout the territory.

R. Stanley Smith Organizes Smith Precision Products Co.

Smith Precision Products Company, 1135 Mission Street, South Pasadena, California, has recently been organzed by R. Stanley Smith and associates, including Thomas M. Penny who has been appointed sales manager.

The new company will manufacture several specialties for applcation in the sales and producton divisions of the oil trade, production having already been started on a new and highly efficient type of rotary pump which Smith has had under development and test over a period of years, and which is particularly adapted for handling gasoline and butane.

Smith is perhaps best known to the oil industry through his development and manufacture of Smith meters. His former company, Smith Meter Company of Los Angeles, was purchased



American Chain & Cable Company recently put into operation a modern manufacturing plant and warehouse at Houston, Texas. In addition to wire rope which will be manufactured and warehoused there, other Acco products which will be carried in stock are Reading-Pratt & Cady Valves, Manley Service Station Equipment, Wright Hand-Operated and Electrically-Operated Hoists, and Ford Chain Hoists and Trolleys.

NOTES FOR THE Equipment Buyer and User

R. S. SMITH

T. M. PENNY

by A. O. Smith Corporation of Milwaukee about 2 years ago. Since that time, and until recently, Smith has been in charge of what was known as the South Pasadena Research Division of A. O. Smith Corporation.

Penny, formerly wth Smith Meter Company and later with the Smith Meter Division of the A. O. Smith Corporaton, was branch manager for Smith Meters successively at Chicago, Houston and Denver.

The shop personnel of the new organization include men who have worked with Smith for many years in the development of the earlier lines.

Merla Tool Corporation Replaces Partnership Company

Merla Tool Company, Dallas, Texas, has been incorporated as a Texas corporation with a capitalization of $40,000. The firm name has been changed to Merla Tool Corporation.

The corporate structure dissolves the co-partnership which has been in effect since 1934. The new corporation acquires all assets of the late co-partnership and assumes all liabilities incurred by the several partners.

The directors of the new corporation are: D. W. Henke, C. S. Crickmer, Roy A. Lamb, Hans C. Glitsch and Fritz W. Glitsch, Jr. The officers are: D. W. Henke, president and general manager; C. S. Crickmer, vice president in charge of engineering; Roy A. Lamb, vice president in charge of sales; Hans C. Glitsch, vice president in charge of materials and inspection; Fritz W. Glitsch, Jr., vice president in charge of manufacturing; V. A. Kagay, secretary and treasurer and George O. Wilson was elected as general counsel.

Heat Exchanger

A bulletin describing a heat exchanger with compensating transfer surface for heating or cooling fluids of low heat conductivity or high viscosity has just been published by The Griscom-Russell Company. The new bulletin explains how the design and construction of this finned tube unit, known as the G-Fin Polysection, provides a more effective and less costly heat exchanger than standard shell-and-

Standco
NO-SMOKE
STANDCO BRAKE LINING
nothing novel—no bunk—but it gets the job done without scoring brake ribs. See page 2100 Composite Catalog.
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For years the oil industry has used the safe, dependable Ecolite Electric Lantern. It has proved itself the finest light available and workers everywhere know that when you carry an Ecolite Lantern it's always ready to give you the light you need where you want it and when you want it.
Ecolites are approved by Underwriters' Laboratories.
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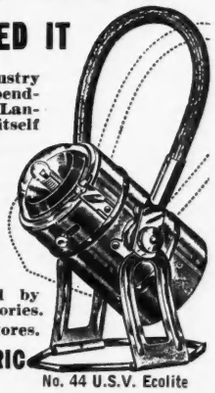
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ECONOMY ELECTRIC LANTERN CO.
3100 W. CHERRY ST. MILWAUKEE, WIS.
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Save Money, Labor, Time

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BREWSTER
Wire-Line CORE BARREL
You retrieve your core through the drill stem on a wire line in 30 or 40 minutes. Regular model takes 42" core, other models take cores up to 8 feet in length. Drag bit head (2 or 3 blade) and core cutter head dressed with Tungsten Carbide Hard Metal. Buy one of these barrels outright and provide your rig with the most economical and satisfactory coring method known. Prices on request.
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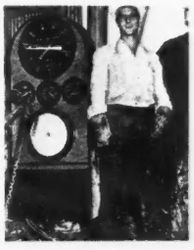
WITH
Greater Sensitivity
Increased Accuracy
Temperature Insulation
It combines many other ADVANTAGES
A new double action, hydraulic diaphragm unit, suspended freely in a force parallelogram, forestalls any possibility of mechanical or frictional losses. Large diameter gauges insure maximum visibility, construction guarantees more positive and accurate reading under all conditions than possible with any other weight indicator.
Fluid is held in the center disc, protected on both sides by heavy hydraulic rubber diaphragms and a heavy metal covering, and in turn is protected by a special temperature insulator. Any gauge can be removed without impairing use of other gauges. The pump assembly is mounted stationary in the bottom of the instrument case.
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NOTES FOR THE Equipment Buyer and User

tube construction for services where one of the fluids, such as heavy oil or gas, has a greater resistance to transfer of heat than the other fluid, such as water or a light oil. The bulletin is illustrated by sectional drawings and photographs showing details of design. Copies of the bulletin can be obtained by addressing The Griscom-Russell Company, 285 Madison Avenue, New York City, and asking for Bulletin 1615.

Chain

A new bulletin from Morse Chain Company of Ithaca, New York, No. 75, is a convenient, compact edition of power transmission data. Included in 12 informative pages is announcement and design data on the Morse Round Pin Roller Chain, a new design which retains the Morse self-lubrication feature in every link and adds complete interchangeability. Specification tables and capacity curves for the new roller chain, with sprocket types illustrated, are discussed.

Additional Morse power transmission products of interest to plant and production men are featured in the bulletin—Morse Kelpo Free Wheeling Clutch, Morse High Torque Indexing and Free Wheeling Clutch, Morse Pullmore Clutch, and the whole family of Morse Flexible Couplings and Universal Drives.

Acme Gas Lift Company Shifts Representatives

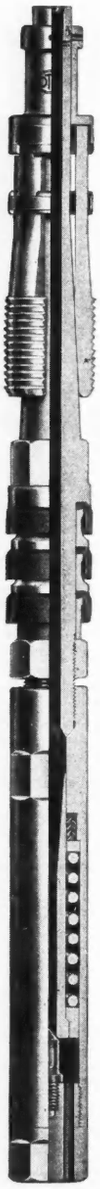
Acme Gas Lift Company announces transfer of W. A. Orth, engineer, from South Texas to North Louisiana, where

W. A. ORTH

he will have headquarters at Rodessa. He replaces A. F. Peters who is being transferred to Hobbs, New Mexico, as representative in New Mexico and West Texas.

A. F. PETERS

NEW OTIS Removable Bottom Hole Regulator



A new, field proven tool for safely . . . . and more **economically** producing high pressure wells at variable rates without freezing. The need for expensive surface heaters is positively eliminated. Rate of withdrawal is conveniently controlled at the surface.

The opening through the Bottom Hole Regulator **automatically** changes when the size of the surface choke is changed to allow for increase or decrease in rate of flow. No well pressure is too high and no volume is too large to be reduced to safe workable flowing conditions by the Otis Removable Bottom Hole Regulator.

The elimination of surface heaters repays the cost of the Regulator many times.

Write or Call Today

OTIS "Don't Kill Your Well" Call OTIS

OTIS PRESSURE CONTROL, Inc.

DALLAS, TEXAS

Branches: Houston, Texas; Oklahoma City, Oklahoma; Hobbs, New Mexico

Representatives: Otis Eastern Service, Wellsville, New York; Western Pressure Control, Los Angeles, Calif.

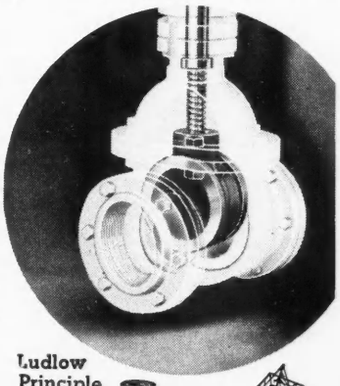
WHAT TO DEMAND OF A VALVE

SMOOTH, POSITIVE OPERATION—gates positioned **directly** opposite ports **before** wedging, and entirely unwedged **before** being raised.

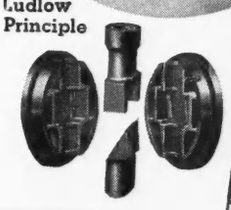
POSITIVE CLOSURE—even after years of service in the open position; 30° angle wedges; gates **self-adjusting** to seats. No pressure shock.

SELF-CLEANING — seat rings cleaned **throughout entire stroke. No internal guides** to cause foul-up.

READY REPLACEMENT OF PARTS—simple construction to ample tolerances, permitting ready replacement of parts.

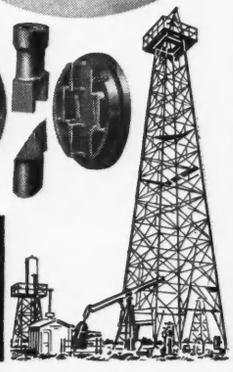


Ludlow Principle



Only the parallel seat, double wedge type slide gate valve provides **all** these essential benefits. This principle, developed and perfected by Ludlow, has been universally accepted and preferred for oil, gas, and water lines since 1866.

Information free on request.



The LUDLOW VALVE MFG·CO· TROY·N·Y· SINCE 1866

NOW! an oil-field DESIGNED PUMPER ENGINE

Here is an oil-field pumper engine that was designed by oil-field engineers and operators, especially for pumper service. The new Novo continuous-duty power unit has—heavy crankshaft, heavy flywheel, anti-friction bearings, big capacity cooling system, extra large oil and gasoline capacity, heavy-duty Twin Disc Clutch.

Sales and Service By

THE NATIONAL SUPPLY COMPANY

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NOVO ENGINE COMPANY
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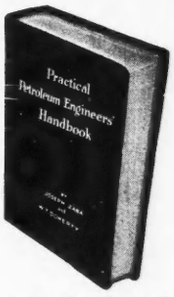
PRACTICAL PETROLEUM ENGINEERS' HANDBOOK



By
JOSEPH ZABA
E. M. M. Sc.
Petroleum Engineer
Rio Bravo Oil Company
and
W. T. DOHERTY
Division Superintendent, Humble Oil & Refining Company.

For a number of years there has been a growing demand for a handbook containing formulae and other practical information for the benefit of the man working in the production and drilling branches of the oil industry. So great has been this need that many engineers have tried to accumulate their own handbooks by clipping tables, formulae and figures from scores of sources.

The co-authors of this volume discovered by coincidence that each had been for a period of several years accumulating practical data which through their collaboration appears in this book. Both of them are men who have not only received theoretical training but who have had many years of practical experience as engineers in dealing with every day oil field drilling and production problems.

As a result of this collaboration of effort the publishers of this volume feel that it is a most valuable contribution to oil trade literature.

Its purposes are distinctly practical. The tables, formulae, and figures shown are practical rather than theoretical in nature. It should save the time of many a busy operator, engineer, superintendent, and foreman.

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NOTES FOR THE Equipment Buyer and User

Baker Oil Tools Sponsors Unusual Picture Contest

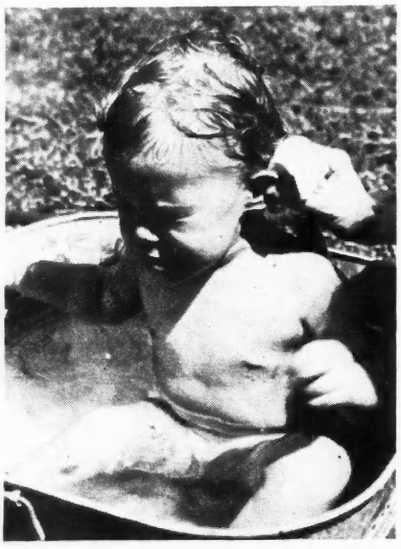
Something unusual in the way of contests was sponsored recently by Baker Oil Tools, Inc., when it launched its "Washing . . . Not 'Fun' But Often Necessary" Candid Camera Contest.

Cash awards were offered for the best candid camera photograph depicting the theme "Washing, Not 'Fun' But Often Necessary," which was tied in with the washing action of Baker Cement Wash-Down Whirler Equipment.

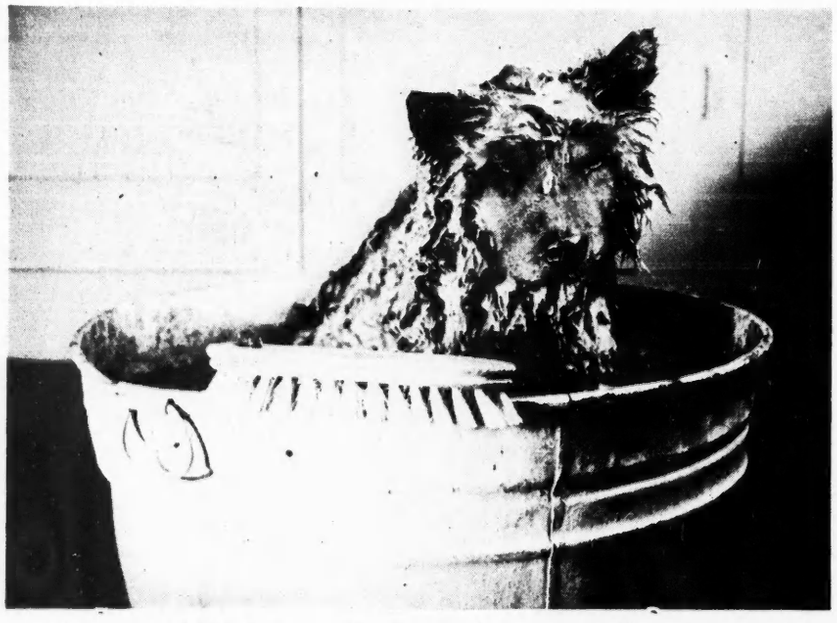
The prize-winning photograph was used as the principal illustration in a full page advertisement covering this equipment which was reproduced in the August 28 issue of THE OIL WEEKLY.

Baker reports widespread interest in this contest, with plenty of fun and "headaches" on the part of the judges in trying to decide which of the great number of interesting photographs submitted merited the cash awards. The selection was finally made and due to the keen interest created by this contest, four of the five award-winning photographs are reproduced below. The sponsor also has advised that in addition to the cash awards, each contestant received a clever soap novelty that should prove useful for daily home "washing" operations.

W. L. Wilgus, Shell Oil Company, Houston, was awarded second prize for the youngster getting his ears washed.



Leslie Jones, Lafayette, Louisiana, gets fourth prize for this punitive washing operation



L. E. Sharp, Shell Oil Company, Great Bend, Kansas, got fifth prize for getting his dog to pose during the middle of his bath.

Ben H. Ravanell, sales engineer, Oil Well Supply Company, Greggton, Texas, got third prize for this boy having fun —"but washing sometimes is necessary."

Squeaks from the Bull Wheel

Inverse Heating

The night was cold, and Mrs. Timms was disturbed about her new kitchen maid who slept in an unheated room.

"Mary," she said, "it's going to be a cold night. I think you had better take a flatiron to bed with you."

"Yes, ma'am," assented the girl, but without enthusiasm.

The next morning, her employer inquired: "Well, Mary, how did you get along with the flatiron?"

Mary sighed, and answered, wearily: "Well, ma'am, I managed to get it fairly warm before morning."

Force of Habit

"Why do you always dust off the plate before you are served?"

"You will have to excuse me. I'm a baseball umpire."

Independence Itself

"Does Mrs. Newbride have her own way?"

"Does she! Say she writes her own diary a week ahead of time."

Forewarned

"Did you know the chief has hay fever?"

"Serves him right, we warned him not to eat that grass widow."

Heard in London

"I hear that you have a new automobile. How can you afford it on your wages?"

"That's easily explained, sir. As you know, there are two hundred assistants in this store. Well, I simply raffle my wages every week at a shilling a chance."

Threat or Promise?

Robert, how dare you hit your sister?

Auntie made me.

Nonsense, I told you that if you hit her I would never kiss you again.

Well, I couldn't let a chance like that slip by.

Not So Far Away

"And now, gentlemen, I wish to tax your memory."

"Good heavens, has it come to that?"

Hello! Hello!

"Good morning. This is Hullett, Crafting, Studge, Gowles and Scarrow."

"Oh, good morning, good morning, good morning, good morning, good morning, good morning."

Didn't Get Her

"Circumstances compel me to decline a marital arrangement with a man of such inferior pecuniary resources."

"Er, ah,—I don't get you."

"That's just what I'm telling you."

Regular Globe-Trotter

"I am very disappointed in the way your son Jimmy talks. Only today he said: 'I ain't never went nowhere.'"

"He ain't, ain't he? Why, the young whelp's done traveled twicet as far as most kids his age."

Quick Retort

"What can you do sonny?"

"Anything."

"Can you file smoke?"

"Yes, sir, if you'll screw it in the vise for me."

Lengthy Job

"Did I hear the clock strike three when you came home last night?"

"Yes, Dad. It was going to strike eleven but I stopped it so it wouldn't wake you up."

New Worlds to Conquer

"Does your wife ever pay you any compliments?"

"Only in the winter."

"In the winter? How do you mean?"

"When the fire gets low, she says, 'Alexander, the grate!'"

Like Father, Like Son

"Your baby surely is a cute little rascal. Doesn't he take after his father?"

"Well, yes, in a way. His father is not so cute but much more of a rascal."

Lucky Name

"Name, please."

"Aloysius Sebastian Cyprian."

"Well, don't let me catch you again."

Coming Up!

"There's a wonderful echo from these rocks, but you have to shout very loud. Now you just yell. 'Two bottles of pop!'"

The tourist shouted and then listened.

"I hear no echo at all," said he.

"Oh, well," said the guide, "here comes the innkeeper with our pop, anyway."

Willing

"Have you forgotten that five dollars I loaned you six weeks ago?"

"Not yet; give me time!"

Urgent

A distinguished bishop, while making a journey by rail, was unable to find his ticket when the conductor asked for it.

"Never mind, Bishop," said the official, who knew him well, "I'll get it on my second round."

However, when the conductor passed through the coach again the ticket was still missing.

"Oh, well, Bishop, it will be all right if you never find it," the conductor assured him.

"No, it won't," contradicted the bishop. "I've got to find that ticket. I want to know where I'm going."

Natural Wonder

"If that chicken lays an egg, will you give it to me?"

"No, Miss, I'd sell it to a museum. That chicken is a rooster."

In His Language

Dentist—"Which tooth do you want extracted?"

Pullman Porter—"Lowah seben, mistah."

At the Dance

"I simply adore that funny step of yours. Where did you pick it up?"

"Funny step, nothing, I'm losing my garter."

Experienced

He—"How about taking a little ride in the country?"

She—"Not tonight. I'm too tired. Let's run out of gas right here in town."

Nice Change of Pace

"And what in the world made you write a paragraph like that?"

"I quoted it from Dickens."

"Beautiful lines, aren't they?"

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WATER COOLER
Gotkool
WATER CANS
& COOLERS
GOTT Water Coolers are the convenient way to keep drinking water handy to the worker, protect it from impurities. Their exclusive construction keeps water cool for long periods. Snug fitting large removable top, handy non-leaking push button faucet. GOTT Water Cans for handy field use. Your Supply Store has them, get one today! . . . .
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GOTT WATER CAN
KEEP PURE DRINKING WATER ALWAYS HANDY

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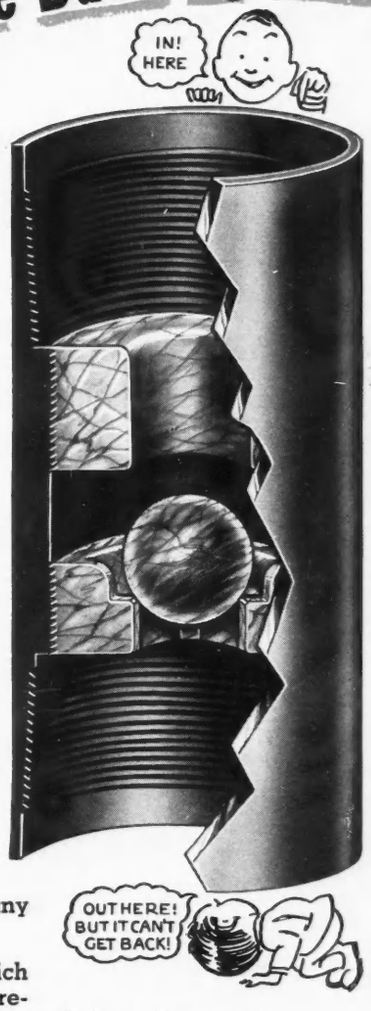

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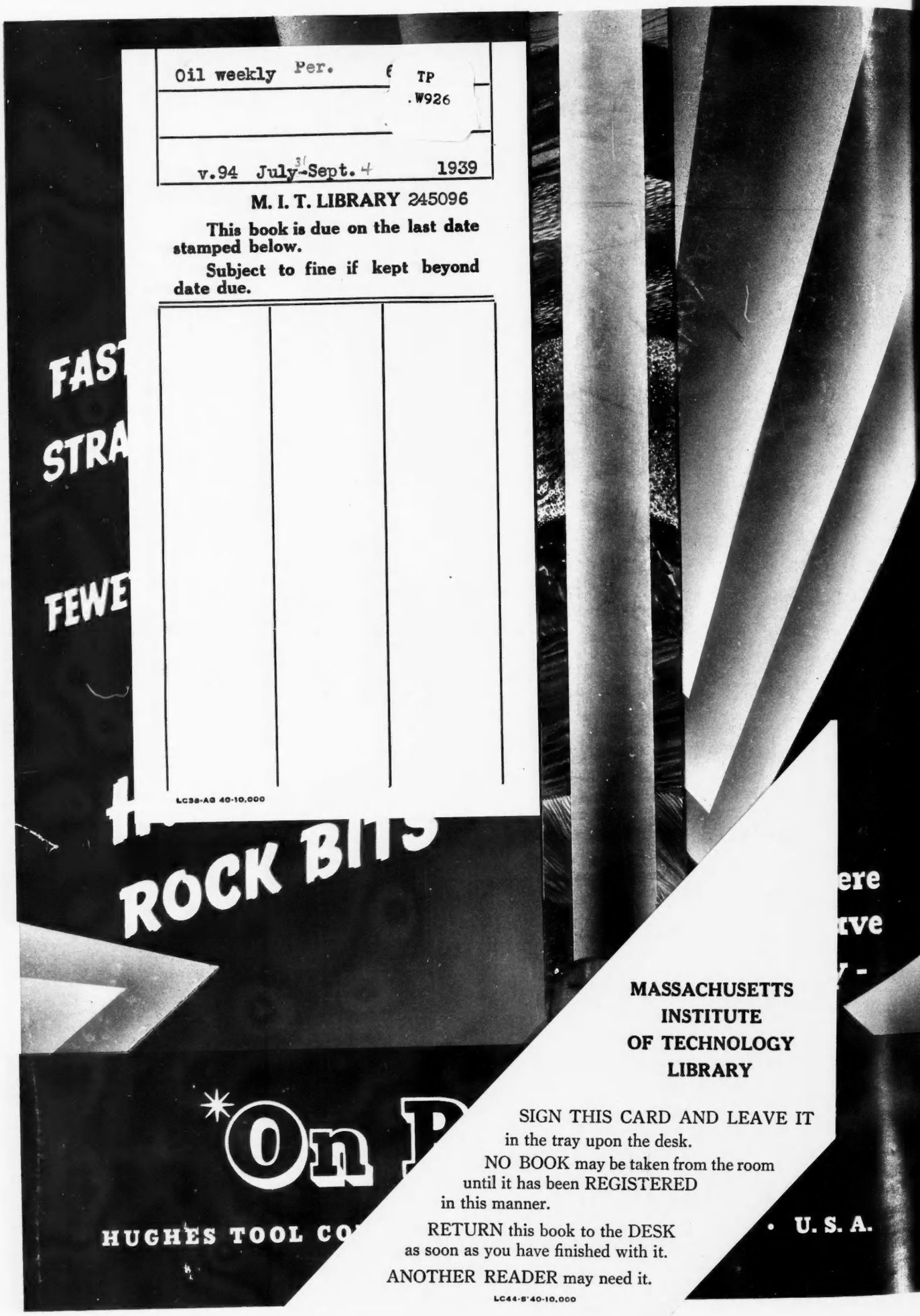

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